

The Electragist

TRADE MARK REG. U.S. PAT. OFFICE

Vol. 23, No. 8

Official Journal of *Association of Electragists*
INTERNATIONAL

JUNE, 1924

Some things that count with the men who need Tork Clocks!



*"I
turn
electric
lights
on and
off
regularly"*

Wind me once a week
and I do it every day

Trimmed Windows and Window Trimming

TORK CLOCKS serve both

1. This lever is now set to turn lights on at 7 p.m.
2. This lever is now set to turn lights off at 11 p.m.
3. This lever may be used to turn lights on or off by hand without disturbing the arms on the dial.
4. The indicator shows whether the lights are on or off.



So!

With a Tork Clock you have every facility for trimming windows whenever you please. You can turn the lights *on* or *off* as you wish. You know whether they are *on* or *off* even if the Tork Clock is located at a distance from the window. You do not need to readjust the dial or reset the clock.

And—

Your trimmed windows will be lighted *regularly*. This is mighty important. Tork Clocks are built so that they will give useful service for many years and we maintain a standardized renewal service which makes it easy to maintain a Tork Clock in good condition indefinitely.

See that your window lights are controlled by a Tork Clock.

Tork Clocks are built for the Tork Company by the Ansonia Clock Company, makers of fine clocks for more than half a century. Tork Service insures long life and good performance at reasonable cost.

Complete illustrated bulletin will be sent on request.

TORK COMPANY
8 West 40th Street, New York

Valuable Selling Information

By special request we have prepared complete instructions for the Tork Clock store-to-store canvass which worked so well. Ask us for it!

"GOLD SEAL" HEADSETS

"The Best That Money Can Buy"



"GOLD SEAL" HEAD SETS are electrically and mechanically,—as well as from a radio standpoint,—as perfect as the highest-priced Head Set on the market,—yet, with all their perfection, they retail at only \$6.00 for 2200 Ohm, and \$8.00 for 3200 Ohm.

The trade mark "DEVEAU" has stood for the highest quality in telephone apparatus for thirty years,—a guarantee that every known advantage in design and manufacturing has been taken into careful consideration.

Magnets are extra-heavy one-piece units; cups are of aluminum to keep down the weight but unlike other Head Sets, every exposed metal part of the set is finished in genuine 24-karat gold,—under a protective lacquer so that the finish will last for years; the terminals of each unit are concealed,—no contact possible with users' hands.

"DEVEAU GOLD SEAL" HEAD SETS are like a piece of fine jewelry in appearance, but with all the radio niceties that the most advanced radio enthusiast can desire. DEVEAU Units exactly match each other in tone,—each has maximum sensitivity and perfection of tone quality.

"DEVEAU GOLD SEAL" HEAD SETS are guaranteed to be electrically and mechanically perfect,—our Guarantee protects every purchaser.

STANLEY & PATTERSON

INCORPORATED

General Offices and Factory: 250 West St., New York, U. S. A.

(3 Blocks Above Franklin St.)

Cable Address: "Eleclight" New York

The Electragist

Official Journal of the
Association of Electragists—International

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H. H. STINSON
Associate Editor

ARTHUR L. ABBOTT
Technical Director

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Member Electrical Committee N. F. P. A.

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Allan Coggeshall, E.E.
Vice President Hatzel & Buehler, Inc.

POWER

William J. Shore, E.E.
Contracting Electrical Engineer

Volume 23

JUNE, 1924

No. 8

Some of the High Spots This Month:

A New Conduit System for Concrete Buildings. A rubber tube is laid. Concrete is poured over it. A few hours later the tube is pulled out and there is the finished duct. Two men and two helpers installed 8,000 feet in less than five days.

What Does the Other Fellow Want to Know? We are always being asked questions by members and part of our service is to supply the answers. What is puzzling one man is generally bothering another as well. For that reason we are beginning this month to print a few of these questions and answers, that we think will interest others.

Is There Any Money in Radio? You will never find out merely by standing by and shrugging your shoulders. M. C. Rypinski, who is considered by many to be the best-informed man in the radio industry, tells quite frankly who is going to make money in radio and why.

What Is a Local Code Committee? This and the questions of why to have one, how to join one, who should be members, where formed and with what results are answered by A. Penn Denton in a short Primer on Local Code Committees.

And There's Lots of Other Good Stuff in this Issue

Published Monthly—Established in 1901

Publication Office: 100 Liberty St., Utica, N. Y. Editorial and Business Office: 15 W. 37th St., New York City

Address all Mail to Editorial and Business Office

Central Stations
and
Electragists } :-

Interdependence

THAT industry or branch of industry that aims to be wholly independent and sufficient unto itself soon dies of dry rot. Likewise that industry or branch of industry that is wholly dependent upon some other industry or branch has no opportunity for progress. But when the several branches of an industry recognize their mutual interdependence and work to correlate their activities, progress of the highest type results for the industry as a whole and for the constituent members.

As a member of various committees reaching into all corners of the industry and in particular as president of the Association of Electragists, International, I have felt the need for stating some mutual industry problems. It is therefore my purpose to address the central station executives of the country through the medium of the ELECTRAGIST on several of the problems which arise in the relations of the central stations and the electrical contractors and dealers. In this way it is hoped that there will come a better appreciation of the efforts which the Association of Electragists is making to improve conditions in the field of electrical installation and retail selling.

Three general factors constitute the electrical industry in a commercial sense and as such must be recognized:

- 1.—The light and power company producing the energy.
- 2.—The manufacturer and the jobber creating and distributing the appliances and materials used.
- 3.—The contractor and the dealer installing such appliances and materials or selling them to the public.

No one of these comes first. To sell energy there must be energy consuming appliances and there must be wiring. To manufacture supplies there must be someone to install them, and there must be energy otherwise they would be useless. To install there must be equipment and energy must be used.

It is evident therefore that the industry cannot function completely unless each of the three factors participates successfully and with a full and sympathetic understanding of the problems of each other.

IT IS my intention in this series of editorials to consider certain of these problems quite frankly as I see them, not from the selfish viewpoint of any one branch but from an industry viewpoint. These will appear monthly and will take up such problems as—

National Group Organizations
National Cooperative Organizations
National Market Building Organizations
Local Cooperation
Profit for the Retailer
The National Electrical Code
An All Metal Standard for Wiring
Public Relations
New Developments
Quality Wiring

Jan R. Strong

President, Association of Electragists, International

This is the first of a series of Editorials on problems which Mr. Strong has the unusual opportunity to see in their mutual relations because of widespread activity in important association work. In addition to being President of the Association of Electragists, he is Director, Society for Business Development; Member Executive Committee, National Electric Light Association; Director, Electrical Board of Trade of New York; Chairman Executive Committee, Electrical Contractors' Association of New York; Member Advisory Committee, New York Electrical League; Director, Electrical Show Company, New York; Member Board of Governors, Building Trades Employees' Association, New York; Treasurer, Credit Association of the Building Trades of New York—Editor.

Retail Radio Distribution

By M. C. RYPINSKI

Vice President and Sales Manager, C. Brandes, Inc.

RADIO has gotten over its growing pains but its troubles are not done; it is entering upon a period of other and more serious problems than how to get deliveries.

ELECTRICAL DEALERS and **JOBBER**s will have to **SELL** radio from now on and do it in the face of the keenest competition from other trades.

THE MANUFACTURER is asking better retail distribution.

THE ANSWER, if electrical men are to keep their share of the trade, is using their best merchandising principles, according to this article from one of the industry's clearest thinkers.

SUCCESSFUL distribution is one of the most pressing problems facing American industry today. The attention of business men in all branches of trade is directed toward the getting of products from the factory to the consumer in the most economical and satisfactory manner. The radio industry is not excepted, and one of its major problems is the promotion of a better class of dealer distribution, insuring that the consumer is given proper service, and that the manufacturer's guarantee and good name are cheerfully supported.

Nominally, radio being of the electrical family it might be expected that the electrical dealer and jobber would represent the logical channel of distribution, and in the main this is true. But this new industry, with its unusual appeal and hold upon the popular mind and imagination, has grown by such leaps and bounds that our staid, sound and conservative electrical jobber has found it difficult to keep control. The result is that other jobbing factors have forced themselves forward.

Some of these have introduced and fostered an undesirable class of dealer—the opportunist class—which is not interested in building the business up by utilizing sound merchandising principles, but seeks to make the most of the immediate harvest without regard

for the welfare of the manufacturers, the jobber, his fellow dealer, the consumer and collectively, therefore, of the industry in general.

Up to the present time the public has been clamoring for radio sets and supplies and any dealer with a good stock on hand has had no difficulty in disposing of it. Now, however, the industry is settling down and the dealer handling radio will have to sell it. The competition is becoming so keen that only the soundest merchandising methods and policies will survive and be successful.

The requirements necessary for the dealer to follow if he is to merchandise radio successfully are very definite and explicit and strict adherence to them will become more and more necessary in the struggle that is coming to decide the ultimate retail distributors of radio. These requirements may be stated as follows: First, he must seek and obtain the confidence of the buying public by a steadfast policy of fair and honest dealing. Second, he must determine to be a constructive and permanent force in the upbuilding of the



M. C. RYPINSKI

industry. Third, he must adopt those sound merchandising principles which years of experience have proved successful in other lines of industry.

These mainly include the exact determination of the cost of selling, the fixing of his selling prices so that not only his cost, but a fair margin of profit is realized, and the elimination of vicious price cutting inspired by commercial jealousies. Fourth, he must be progressive, developing with the industry; his store and windows must be inviting and attractive, his salesmen courteous and efficient; he must do his quota of local advertising, backing up the manufacturers in their campaigns. Fifth and last, but by no means least, his watchword must be Service. No influence is so strong in the making and holding of a satisfied customer, that goal of all good dealers,

than the proposition of serving him during and after the sale, and assuring his absolute satisfaction regardless of immediate cost. Like bread cast upon the waters it will return many fold. Reliable manufacturers make a practice of guaranteeing their products and these guarantees should be cheerfully backed up.

The electrical jobber with his years of successful merchandising experience will no doubt agree in the main with the proposition just advanced and it should be his duty and privilege to foster the development of a high stand-

ard of distribution for radio. He knows that other jobbing groups—notably the music, hardware and automotive—are making strenuous efforts to do their part in this distribution set-up and it may well be that each and all of them will play an important part in radio distribution when it becomes stabilized, but certain it is that none will survive so far as radio is concerned except those who constructively and progressively help in the upbuilding of a class of dealer who will respond to the principles and policies previously enunciated.

An Electric Bricklayer

An electric brick laying machine that lays 1,200 bricks an hour, as against 500 a day for the average human bricklayer, is the latest application of electrical energy to industry, says the *Ironmonger*.

Upon rails placed around the outside walls of the building a traveling boom is set, and upon this are the mortar tank and laying mechanism, driven by a three horsepower electric motor. The laying wheel rotates, taking two bricks from the carrier, while another wheel spreads mortar as the carrier moves along the boom. At the end of the wall the machine changes direction and proceeds as before.

Three men are required to supply the electric bricklayer, which does the work of 20 masons.

Lightning Protection and the Electragist

THE popular conception of the lightning-rod salesman still classes him with the old-fashioned country peddler whose rickety wagon carried everything from potato mashers to bolts of ribbons. Until a few years ago there were no figures available on losses in rodded as compared with unrodded property and the contractor-dealer has shown little interest in the field for the reason that he had no statistics to show the possibilities of it.

That there is a field there for the electragist is indicated by a report submitted at the recent annual meeting of the National Fire Protection Association. The table given below shows that in the case of Iowa, for which the most complete data is available, the loss in rodded property was only 8.2 per cent of that in unrodded property.

"The effectiveness of lightning conductors in reducing losses from lightning," the report continues, "is indicated by the table which was taken from the reports of a number of fire marshals and insurance companies in the United States and Canada. The reports in nearly every case stated that practically all of the fire loss from lightning occurs in rural districts. The percentage of protected farm buildings is not known except in Iowa, where it is about fifty. Most of these installations have appeared within the last fifteen or twenty years. At the beginning of that time the protected building was the one that attracted attention, whereas now it is the unprotected building which is the exception."

The report details a safety code for the protection of life and property

against lightning, which is the result of work done both by the National Fire Protection Association committee on the subject and a similar committee acting for the American Engineering Standards Committee under the sponsorship of the United States Bureau of Standards and the American Institute of Electrical Engineers.

The requirements of the code evolved are so technical that only the electragist is fitted to make a lightning

rod installation, thereby opening up a lucrative field which to date has not been very much cultivated by anyone.

The report considered is subject to change before final adoption, but when the code is in its ultimate form the contractor-dealer will find it a valuable aid in lightning-rod sales.

Comparative Fire Losses from Lightning in Rodded and Unrodded Property

Source of Information	Year or Years	No. of Losses Rodded Bldgs. Not Given	No. of Losses Unrodded Bldgs. Not Given	Amount of Loss Unrodded Bldgs. \$341,065.52	Amount of Loss Rodded Bldgs. \$4,464.30	Percentage Loss Rodded Unrodded 1.31
Protected Mutual Fire Assn. Summary of data from 55 Mutual Insurance Cos.	1905 to 1912					
State Fire Marshal's Report—Iowa.	1919 to 1921	28	503	1,060,668.00	87,979.00	8.2
Fire Marshal's Report—Ontario, Can.	1921	5	1267	899,936.00	4,089.00	4.5
Division of Fire Prevention Illinois.	1915 to 1921	30	2840	5,162,111.00	20,610.00	0.4
Fire Marshal's Report—Ohio.	1917 and from 1919 to 4-1-22	21	647	1,521,865.00	69,155.00	4.6
Fire Marshal's Report—Minn.	1917 to 1921	4	375	961,425.00	Value of 4 barns	
Fire Marshal's Report—La.	1916 to 1921	8	743	940,827.00	10,236.00	1.06
Industrial Commission Report—Wis.	1914 to 1921	58	2319	4,504,575.00	206,665.00	4.5
Fire Marshal's Report—Kansas.	1918 to 1921	10	687	1,618,065.00	36,745.00	2.2
TOTAL		164	9391	17,010,537.00	439,943.00	2.58

NOTE: Table taken from records of the U. S. Bureau of Standards.

A New Conduit System for Concrete Structures

LIKE huge night walkers partially out of their holes on a damp night, some pieces of rubber may be seen every so often sticking out of the floor of one of New York's newest concrete buildings. A man in overalls comes along and gives them a kick, lifts off a piece of rubber that looks like a collar and taking hold of one of the "worms" begins to pull. Pretty soon he has 12 or more feet of rubber tubing laying beside him on the floor and there is left in the concrete a smooth round hole—the latest thing in big building conduit.

What looked like a collar was really an outlet box form and after it was taken away a neatly formed hole was left in the floor with the ducts leading into it.

This new wiring system is known as the Murray duct system. It is now being installed in the new service building of the New York Edison Company at Forty-first street and First avenue,

New York. This new ten-story reinforced concrete building which is the first to use this system of wiring will be used to house all of the outside departments, including the transportation department. Facilities are provided for charging the batteries of the company's large fleet of electric trucks.

The inventor of the system, Thomas E. Murray, has been searching for some time for a way to form conduits in concrete. At the new Hell Gate power station of the United Electric Light & Power Company, which was designed and erected under his supervision, spirally cut paper tubes were used. As soon as the concrete had set these were removed by unwinding them. It was not entirely satisfactory, however.

Now, Mr. Murray has found a way to cast conduit holes in concrete that he claims bears none of the disadvantages of the paper tubes.

Raceways are formed in the concrete arches by means of flexible rubber



Fig. 1.—Pulling Three-Quarter Inch. In Front is an Outlet Box Form

tubes which are laid in place before the concrete is poured and are pulled out after the concrete is set, leaving a smooth raceway for pulling in the wires.

Sizes range from three-quarter inch up to four inch, only inch steps being taken after one inch. The smaller sizes a man pulls very easily. With the larger sizes a rope is required in order to get the grip necessary to pull properly.

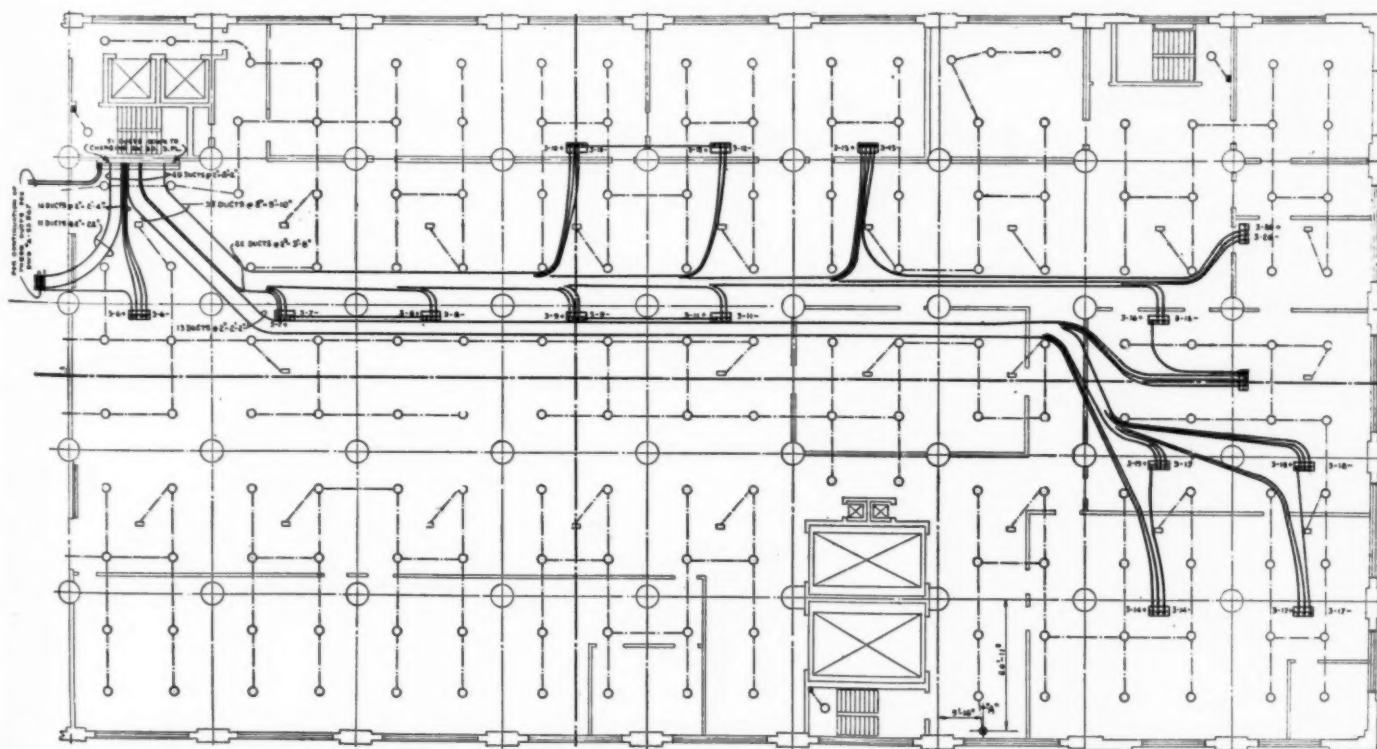


Fig. 2.—Circuit Layout for Basement Garage Floor. Each Circuit had Its Own Duct Thereby Requiring a Great Number of Parallel Duct and in Many Cases Where There Had to be Cross Overs They Were Accomplished Without Difficulty

SYMBOLS
 1. ○ FLOOR OUTLET BOX
 2. □ HOLE IN FLOOR CONNECTED TO 8"x8" BOX
 3. — DUCT FOR CHARGING CIRCUITS MINIMUM SPACING CENTER TO CENTER TO BE 2"
 4. - - - DUCT FOR LIGHTING
 5. ■ HOLE THROUGH FLOOR
 6. ● INDICATES 2" HOLE THROUGH FLOOR FOR DEER METER FEED

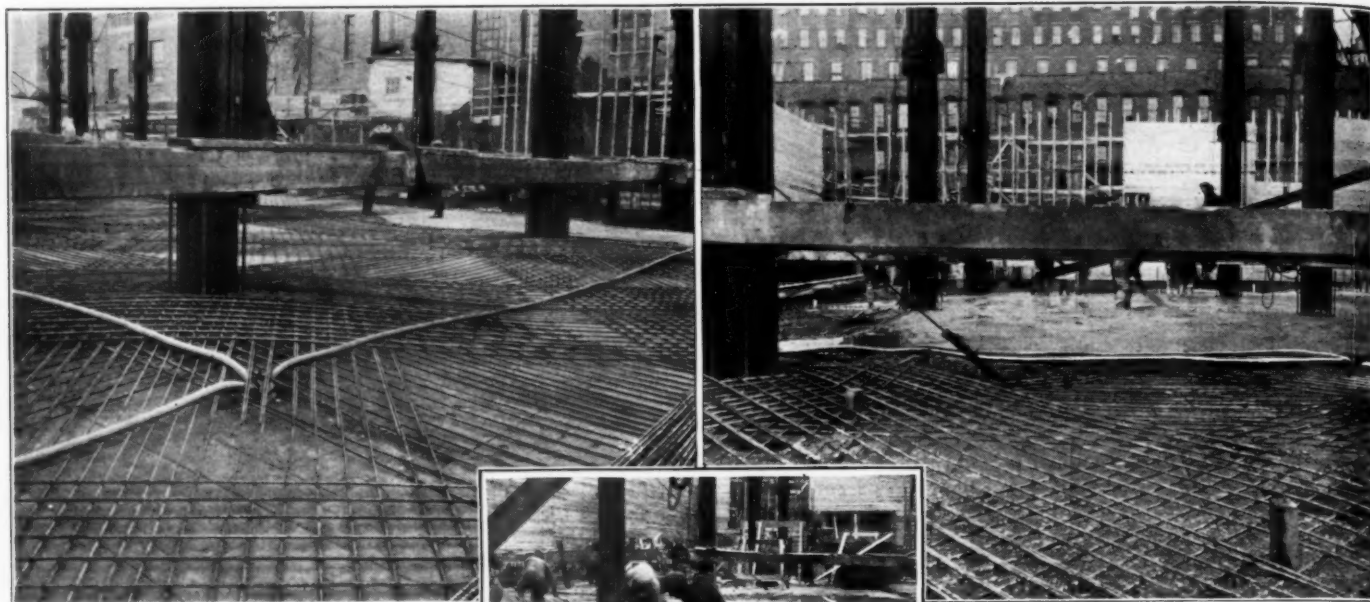


Fig. 3.—Laying the Main Distribution Duct. Upper Left Shows Tubes Entering Pull Box. Upper Right and Center Show Tubes About to be Covered With Concrete

As soon as a piece of rubber tubing is removed from a hole it is ready again for service so that when a job is done and all the conduit is in there remains the same amount of material as was on hand when the job began.

While only round tubing is used in the Edison Service Building, it has been demonstrated that flat oval tubing will work equally as well if not better. These oval ducts will be recommended for buildings where the floor finish is to be thin, as would be the case where there was a cinder fill between the slab and the finish.

The lighting distribution has been laid out on the usual three-wire Edison tree system. From the main lighting switchboard, located on the first floor of the building, main feeders are carried in the floor fill through 2-inch concrete ducts to points along the wall of the building where risers are carried up to the walls in the same type of duct laid vertically to the distribution points on each floor.

There are six distribution points on each floor, from each of which the lighting for about 8,000 square feet is supplied. From each distribution point there have been provided three 2-inch concrete ducts running to a network consisting of 2-inch ducts run longitudinally through the building and tied together with cross ducts at various points.

These ducts terminate at outlet points in alternate bays, from which the individual circuits are distributed. At each distribution point there has been provided a sixteen circuit panel.

ment up to eight circuits are carried in each duct to the duct network.

The distribution boxes in the various bays are made in the form of a truncated pyramid anchored in the arch and provided with spun metal bushings, which provide a smooth surface over which to pull the wire. This is illustrated in Figure 8.

From these distribution boxes the branch circuits are carried up through the arch in a concrete riser duct to a floor box located directly above the distribution boxes. This floor box is formed in the floor finish by means of three-quarter inch rubber tubing which is placed before the floor finish is laid and is pulled out after the concrete has

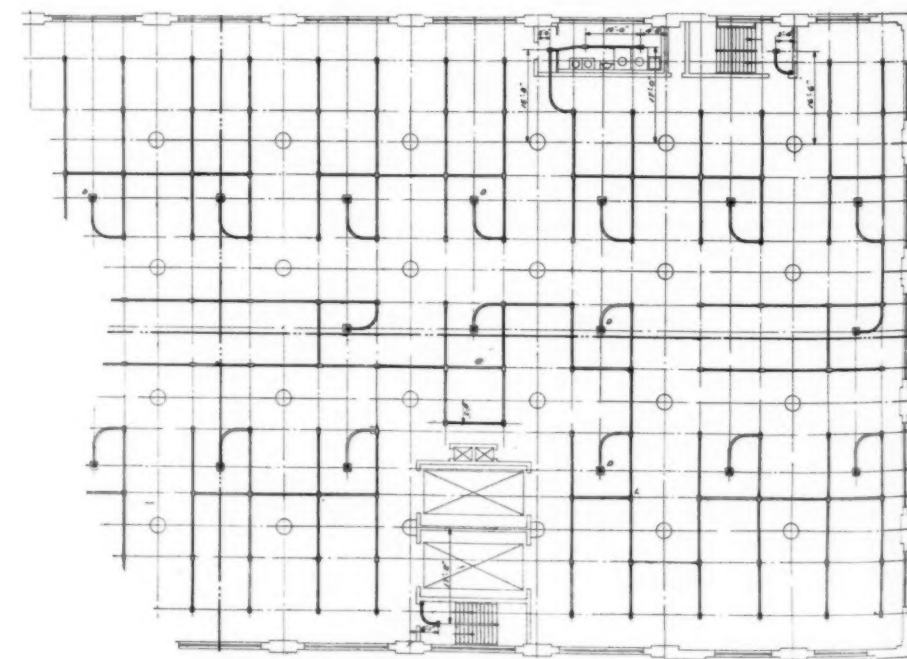


Fig. 4.—One Corner of Building Showing Layout of Conduit in Floor

set. This tubing runs to the points where the fixtures are to be hung and terminates in floor boxes similar to those described above. From this point the branch circuit is carried down through the arch to an outlet box formed in the arch by means of a gypsum form in which a metal fixture hanger is held, as illustrated in Figure 8.

After the forms are removed the gypsum is broken away, leaving the fixture hanger in an outlet box formed in the concrete and embedded in the concrete arch.

Lighting and distribution boxes are grounded to the reinforcing rods with short ground wires which are installed before the concrete is poured. Simple as it might seem, it has been somewhat of a problem to know just what to do about grounding. Its importance is recognized, as it is one of the first points raised by interested observers.

In placing the tubes prior to pouring the concrete it has been found preferable to arrange for some means of holding them in place during the pouring. The tubes are stretched out on the reinforcing rods and tied to the rods at intervals with string. The tubes that are run in the finish are held in place during the pouring by means of angle irons. As soon as the concrete has been poured men with hooks remove the angle irons.

Such bends as might come in the duct

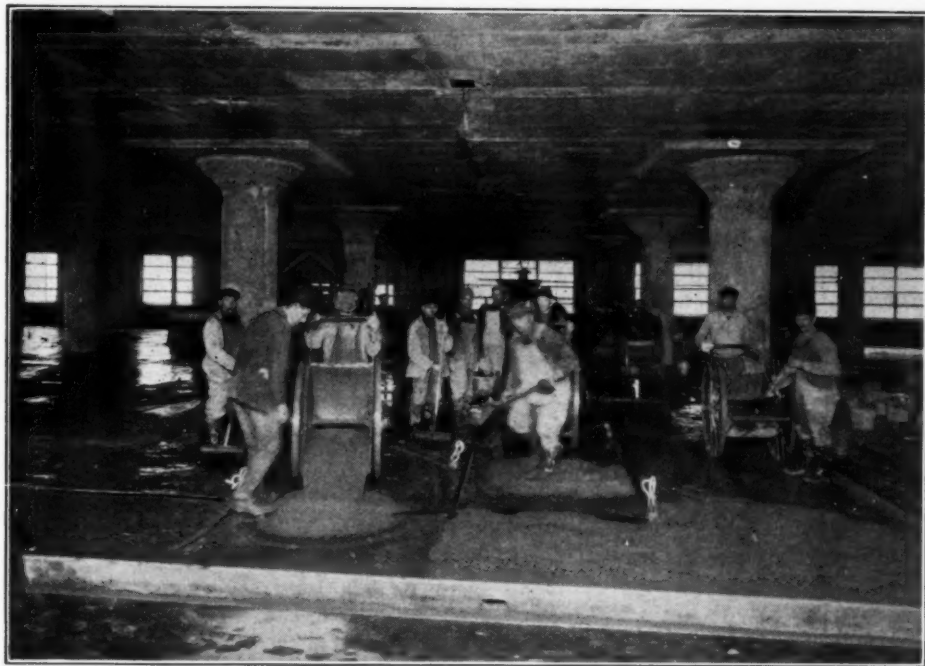


Fig. 5.—Covering the $\frac{3}{4}$ in. Conduit With Floor Finish. The Angle Iron Can be Seen Holding the Tubes in Place

cause no trouble in pulling the tubes, it is stated, and will not in any way make it more difficult to pull wires through them.

The tubes are generally pulled after an overnight set, but tubes may be left many days before pulling, without any apparent trouble of any kind. The pulling of the tube does not have any troweling or slicking action because it is allowed to remain until the concrete

has had a fairly hard set. Experience with the laying of this system indicates that best results are secured in duct smoothness when the concrete is slopped in. If it is not slopped in the ducts are apt to show a faulty surface and while it is not rough because all projecting particles have a concrete coating still it is felt that there might be objections unless the inside were uniformly smooth. For that reason it has been found advisable when pouring cinder concrete to use a richer mixture right around the tubes. In the pouring of the surface this is not necessary because the surface mixture contains only sand and cement.

Inasmuch as cinder concrete is not used in the Edison Service Building, no experience is available on this point, but the engineers seemed to feel that in order to insure against rough duct surfaces which might result where cinder concrete was used it would be advisable to have a rich mixture right around the tubes. So far no abraasive action has been experienced.

No consideration so far, it was stated, has been given to the detail of construction that would be required for running into various kinds of partition.

When asked if a larger size of raceway would be required than if metal were used it was stated that because tube sizes varied in steps of one inch that the size required would generally be larger than with metal where smaller gradations in size are available.

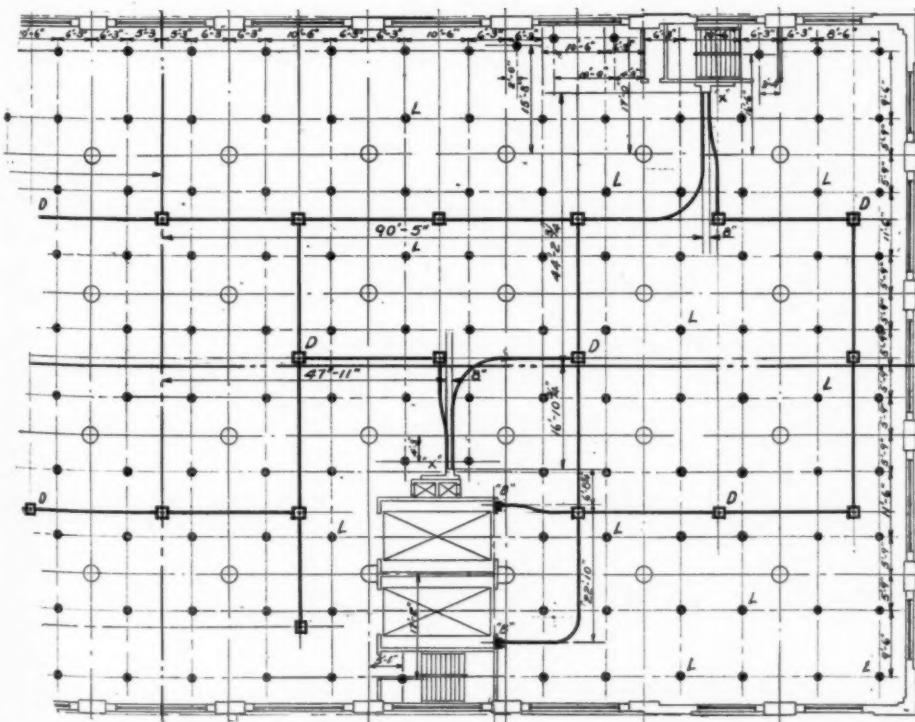


Fig. 6.—Same Corner of Building as in Fig. 4 Showing Layout of Distribution Conduit

The point which is stressed most, aside from material saving, is the small labor content of a job of this calibre.

The force required to lay and pull the tubes for this entire building has been two men and two helpers, and it is claimed that even one team could have done the job. They have laid and pull-

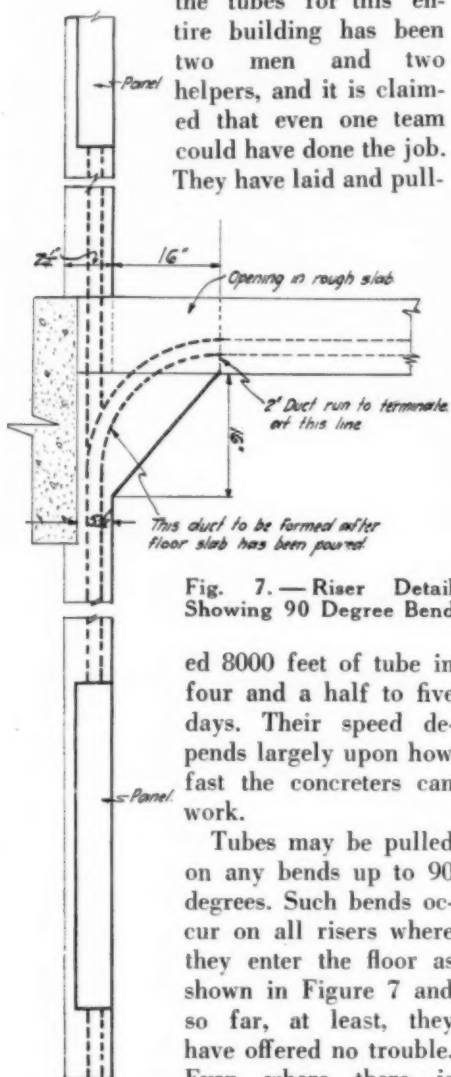


Fig. 7.—Riser Detail Showing 90 Degree Bend

ed 8000 feet of tube in four and a half to five days. Their speed depends largely upon how fast the concreters can work.

Tubes may be pulled on any bends up to 90 degrees. Such bends occur on all risers where they enter the floor as shown in Figure 7 and so far, at least, they have offered no trouble.

Even where there is more than one bend in a long run, as is shown in Figure 2, the tubes came out well.

Electrifying Furs

Furs for winter, furs for summer, furs for spring and furs for autumn; furs by the tens and hundreds of thousands are made each year into garments for the Lovely Fair. And before they can be so made, each skin must pass through intricate processes to prepare it for use. In days gone by manual toil beat and kneaded the pelts to their final lustrous beauty. Today electricity swirls, twists, cleans and dyes them to a richness and color never dreamed of by their original owners.

As they come from the trappers, furs are dingy and stiff, with tufted tangled hair. The first process, "beaming," removes the last bits of fat from the flesh side. When this is done, the skins are put in an electrically-operated trampling machine, which causes wooden shoes to stamp up and down on them, work formerly done by men in special boots. This softens the skins, which are then worked for further pliability and thrown into huge revolving drums, together with hardwood sawdust. Electricity revolves the drums, saturating the furs with sawdust, and the next machine beats the pelts to remove it. Electric "combers" smooth and straighten the fur and prepare it for the electric dyer. The skins are put into vats, and electric motors drive paddles which

toss them around, producing an even color. When this is done, they move on to the hydro-extractor, also electrically driven, which removes all the dying liquid. In the drying rooms electric exhaust fans remove the last traces of moisture, and a final electric beating delivers the skins in perfect condition, "alive," and soft.

From the Ends of the Earth

There must be something inherent in the construction business that makes contractors estimate on the "outlet" basis. English electrical papers have brought it up and here in this country it has been going on in spite of ridicule for years. But at the opposite end of the earth, in far off Australia, where one expects to find things different, there is the same story, except that they call them points rather than outlets. A recent issue of the Australian Electrical Times contains an editorial on that point which is well worth repeating:

CONTRACTORS

Don't Quote Per Point

The "Point" is the termination of the wiring for attachment to the fitting for one lamp or one other consuming device.

Therefore, whenever you quote on a per point basis and include everything right down to the lamp, you are giving away at the very least to the ceiling rose, flex, holder, reflector or fitting, and lamp, because these do not constitute the point; they are the fittings and should be charged as such. Also, quoting on a per point basis usually means that you have not measured up and estimated on the job—you are, therefore, merely guessing at the cost and are quite likely to make a bad guess by missing out many little items such as screws, fares, bushes, holders, etc., and forget altogether that you have overhead charges. Where you

Quote Per Complete Installation

you will have to actually estimate on each job and therefore are much less likely to miss out any of the little items of cost that make the difference between loss and profit, therefore

Don't Quote Per Point

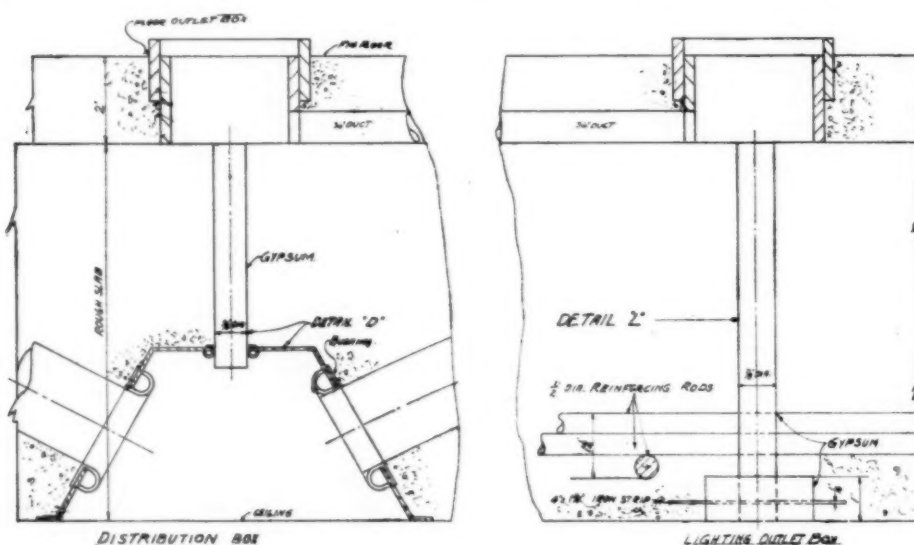


Fig. 8.—Detail of Distribution and Lighting Outlet Boxes.

NOW is the time to which the June bride has looked forward eagerly. No less so has the jeweler, the florist, the stationer, the costumer and the house-furnishing dealer. Only one other season, Christmas, is of more importance to them and as a result of their long training of the public to think mainly of useless things when it is considering wedding gifts, the June bride gets four sets of pickle forks, a dozen clocks, eight sets of ornamental candlesticks and out of a hundred gifts receives probably two or three that combine beauty with utility.

What is the electrical dealer doing to protect the interests of the June bride and to get his legitimate share of that business? The sales are there waiting for him, for there is no gift more suitable than the electrical gift, none other which combines handsome appearance with real usefulness. He has much more to offer in the way of substantial, appreciated gifts than any other merchant and as soon as the public realizes this the electrical dealers' sales will reach a peak in June second only to that of the pre-Christmas season. It is up to the dealer to educate the public on this.

How can he do it?

The means are the same which he has used over and over again to sell other ideas and which remain perennially good. They include special window displays, counter displays and direct mail advertising.

In connection with this, the Society for Electrical Development, Inc., 522 Fifth Avenue, New York City, has prepared a number of sales aids for the dealer, which will be sent to any electrical store upon request at a small payment to cover the cost of materials.

The first is a beautiful sepia photograph, which is reproduced in black and white in the center of this page. It has been planned as the nucleus of a window display which should feature every appliance, portable lamp and fixture that would be suitable for a wed-



Here Comes the Bride

ding gift. And few things that the dealer carries are not suitable. The panel which is framed in heavy white cardboard measures fourteen by twenty-nine inches and is of a size and type which will attract the eye of the passerby to the window. After that it is up to the efforts of the window display man to show just how well prepared the dealer is to meet the needs of anyone who intends giving a wedding present.

For counter displays there is offered a cut-out of the photographic figure in the large panel. It is eight inches high with an easel back so that it may be placed in among displays of appliances or on counters. These come in sets of five.

A hand lettered card in two colors will prove valuable for direct-mailing purposes. This is seven by twelve inches and comes three in a set, two with bridal gift messages and the other with a graduation gift message. The messages are:

"Your gift to the bride or bridegroom tells its own story. **GIVE SOMETHING ELECTRICAL.**"

"The ideal wedding gift combines beauty and utility. **GIVE SOMETHING ELECTRICAL.**"

"After Graduation the serious business of life begins. As a little reminder of happy schooldays **GIVE SOMETHING ELECTRICAL.**"

A small post-card size reproduction of the large display panel has been prepared, with reverse blank for imprint of company address or special message.

The large background panel has been priced by the Society at \$1.35, the bride cut-outs at 85 cents per set of five, the hand-lettered cards at 30 cents per set of three, and a combination of one of each of these at \$2.25. The "Bride postcards" will be sent to dealers for \$35.00 per thousand on white stock and \$50.00 per thousand on cream linen finish stock.

The electrical dealer heretofore has made little more than a sporadic attempt each year to attract the "June bride" business. A part of the great amount of money spent each year on wedding gifts is properly his, but it will never jingle the cash register of the electrical industry as merrily as it should until the dealer in electrical goods follows the same plan as other merchants, that of preparing well-ordered, definite, yearly-recurring selling plans.

It is up to the electrical dealer to protect the bride and see that something useful as well as beautiful is included in the wedding gifts. And in protecting her interests he will find he has protected his own.

Where Should Service Switches Be Located?

This is one of the best and clearest expositions of the principles underlying the service switch rules ever written. It appeared recently in one of the bulletins of the Bureau of Electrical Inspection of the City of Chicago

By VICTOR H. TOUSLEY,

Chief Electrical Inspector, Department of Gas and Electricity of Chicago

THE following description of the intent and purpose of the service switch will answer many of the questions arising in connection with this subject.

The primary object of a service switch is to cut off current in case of emergency. As the service switch always includes the fuse which protects the mains, its location in the mains must also be carefully considered. As an emergency device the location of the service switch should satisfy the following requirements:

- (1) It should be readily accessible to firemen.
- (2) It should be readily accessible to tenants.
- (3) As a safety device it should be so located that the wiring unprotected by a fuse is a minimum.

Basis for All Rules

These factors form the basis for all the rules on service switch location. It is not always possible exactly to satisfy all of these factors. In this case the most important factors should be given first consideration. The three points mentioned rank in order of their importance as follows:

- (a) The amount of unprotected wire.
- (b) Accessibility to tenants.
- (c) Accessibility to firemen.

In complying with (a), on the amount of unprotected wire, the rules will be satisfied where, on underground services, the service switch is placed at the service stub. On overhead services the service switch should be as close as possible to the point where the wires attach to the building.

In apartment buildings and in some residences the rear of the building is occupied by living rooms. In some of these instances, on account of the unsightliness of the switch, requests are made to locate the switch in some other part of the building. This generally necessitates a long run of unprotected service lead and these requests must, for the reasons cited above, be refused. It is acceptable, however, to install only

the service switch on the rear wall, the meter being placed in any other suitable location.

On underground services it is occasionally necessary to give consideration to the accessibility of the switch and the rules are sometimes modified to allow the switch at some other location than at the service stub. For instance where the service enters a coal hole or similar location inaccessible to either firemen or tenants.

In obtaining a compliance with (a) in the case of overhead services, a minimum of unprotected wire would be obtained if the service switch were located on the second floor of the building, but if this were permitted, we would entirely overlook the factor of accessibility. A switch is most entirely accessible to firemen when it is of easiest access from the ground level. This requires that the service switch be located on the first floor or the basement. In apartment buildings and residences, where the first floor is raised from the ground, the basement is the logical location of the service switch. In industrial buildings where the first floor is at the ground level, the first floor is the logical location of the service switch.

Accessibility to the tenant requires that the switch be located so as to be always easily available for operation. A locked store room, a bath room which is liable to be locked, a coal bin which is liable to be full of coal, are not easily accessible and do not therefore satisfy the requirements of the rule.

Accessible Points

In a residence, the basement is always accessible to the tenant so that a service switch located at this point is satisfactory. In an apartment building a service switch located in the basement is accessible to all tenants and to the janitor and therefore satisfies the requirements of the rule.

In an industrial building all parts of the building are accessible to the occupant so that a service switch on the first floor is acceptable.

There are other secondary considerations in the location of the service

switch. Safety to life must be taken into account. Convenience to troublemen, meter testers, etc., must not be overlooked. With regards safety to life the location of the switch with regard to grounded fixtures must be considered.

It is also possible to make a switch too accessible. A service switch located outside the building on a porch is entirely too accessible. It invites manipulation by children or other unauthorized persons. Children are tempted to cut off the current, obtain shocks or perform other experiments. It also offers a ready means of cutting off current and placing the premises in darkness or putting out of service any alarms that may be operated by bell transformers.

There are some cases where a variation from the standard rules must be permitted. These variations are covered by the rules but should only be employed after special permission has been obtained.

Tombstone Estimating

A good story is told by Laurence R. Chilcote, secretary-manager of the Electrical Contractors' and Dealers' Association of Alameda County, California.

"Two colored men sat down to rest and refresh themselves under a tree in an old cemetery. One read on a monument the following very optimistic declaration:

'JOHN SMITH—NOT DEAD—ONLY SLEEPING'

"The silence was broken by the boisterous laughter of the other, who thus explained the joke in those solemn words:

"John isn't kidding anybody but himself."

"Now in telling this story," said Mr. Chilcote, "I don't mean to insinuate that any of you are dead and don't know it, but I do want to ask one question. Who do you think you are kidding when you 'cut in' on a job at a price which allows for nothing else but labor and material?"

C. C. Bohn, New York City

His complete biography would serve as a basis for a history of the electrical contracting business in New York City. Born in Manhattan in October, 1870, his first job at the age of eighteen was as an apprentice with the old firm of J. H. Bonnell & Company, electrical contractors. The business in those days was less complex than at present and five years later he decided he had enough experience to go into business for himself as the C. C. Bohn Electrical Company. Accordingly he opened a store at Broadway and 42nd street, his total assets consisting of \$40, an ideal of honest, truthful and reliable service, and a boundless enthusiasm. For over a year the largest item on his books was only \$58.00, yet within that period he purchased another business and moved further down Broadway. This meant an alarming increase in overhead, but Mr. Bohn found his judgment justified. The business grew rapidly and for seven years, according to a list issued yearly in the late nineties by the New York Edison Company, he installed more lighting wattage than any other electrical contractor. Some years ago he moved the company to the four-story building at 820 Sixth Avenue, a property which he owns and rents to his business. Always a firm believer in the value of the trade association, Mr. Bohn has long been a member of the New York Electrical Board of Trade, New York Electrical Society, New York Electrical League, the Society for Electrical Development, and the A. E. I.



Electragists You Should Know



George T. Barrows, Pittsburgh

Newsboy, government employe, cigar clerk, steel worker, insurance agent, central station inspector, groundman, lineman and contract salesman, George T. Barrows gained experience of human nature in all these professions before deciding to become one of Pittsburgh's most successful electrical contractor-dealers. Born at Lock Haven, Pa., in 1874, his first job at the age of 14 was one which has started many eminent men on the road to fortune, that of a newsboy. His second consisted of keeping a watchful eye on the tide readings of the Potomac River for the United States Survey, while in the period from 1891 to 1903 he worked as cigar clerk, Census Bureau employe and steel-mill hand. In 1903 he made his debut in the electrical industry with the Allegheny County Light Company, remaining there until 1911, with the exception of two short periods in 1905 and 1908, when he sold insurance. He joined the contractor-dealer ranks in 1911 by starting the American Electric Company in Pittsburgh. The business grew rapidly and between then and 1921 he purchased the Cleland Electric Shop at Wilkesburg, Pa., and the McKeesport (Pa.) Gas & Electric Supply Co., incorporating as the Barrows Electric Shops, Inc. In 1922 he centralized his efforts by closing the branch stores and using more space in the building in Pittsburgh, which the company owns. Mr. Barrows is a charter member of the Electrical League of Pittsburgh, chairman of its 1924 wiring committee, and a member of the Society for Electrical Development since its organization.

The Symbol of Adequate Wiring

THE Red Seal plan to promote adequate wiring for convenient electric service is now available for use in this country. The rights to the plan, initiated and used so successfully by the Electric Service League of Toronto, have been acquired by the Society for Electrical Development and are offered to electrical leagues according to certain regulations subject to necessary adjustment to meet local conditions. A license arrangement will be used to protect the seal locally and nationally.

The Red Seal shown in black at the top of this page, has been redesigned. Its use is in connection with a house wired according to certain standards of adequacy. These standards will be set up locally.

A house so wired will be placarded on the outside with a big red seal. There will be a smaller permanent one for the meter box and finally the owner of the house will receive a certificate as evidence that the house is adequately wired. This will be found to be of service to owners or builders when renting or selling the property.

The Red Seal plan, according to the Society, is intended for use as a follow-through in communities where electrical homes have been exhibited to the public. It involves local cooperative advertising and selling to acquaint the public with the Red Seal and specialized advertising directed to architects, building contractors, real estate men, home owners and others to explain the advantages of adequate wiring and the meaning of Red Seal approval.

As used in Toronto, the Red Seal has been very successful in raising the standards of house wiring. This has been particularly true with houses built to sell. Because wiring was out of sight and because the public had no standard of measure, the wiring of speculative houses has been very much neglected. It is seldom that an electrical contractor with a reputation for quality work will touch a speculative building job. For that reason, houses built to sell are

THIS SEAL certifies that the ELECTRICAL WIRING in this house has sufficient convenience outlets, switches and other essential facilities to provide for CONVENIENT ELECTRICAL SERVICE



Approved according to the standards established by the
Electrical League
Seal No. _____ Location _____

generally very cheaply wired.

The Red Seal plan gives the public a standard of measure. Furthermore, under the plan, this standard is set up by the local electrical league. For that reason, the standard is bound to be high and the public knows it. Moreover, no house can receive a Red Seal until it has passed the test of the electrical industry. To the public that means that the electrical industry is not going to set up a standard of excellence and then let anyone get away with anything.

With such a background the wiring of a Red Seal house becomes a thing of value. It has a definite meaning to a person who is renting or buying. It means that there is one part of the house, at any rate, that no one need ever worry about.

In any place where there has been an electrical home exhibit the Red Seal campaign can get under way quickly, because the public will be able to visualize the convenience and comfort of adequate wiring. As soon as the public knows about the Red Seal, the builders will be quick to take it up. Builders are ever looking for such standards of building construction because of the additional selling points. They

make more expensive homes which, because of their known standards, can be sold quickly even in competition with less expensive houses.

Furthermore, contractors who specialize in Red Seal wiring will find that there is no more trouble in selling an adequate job than one that is skimpy; that competition if anything is less because one is selling a known job against a competitor's unknown job and finally, that there is a better profit in a Red Seal job than in a cheap job. He will find that a Red Seal job will require good mechanics and in the long run, he will probably find that a good mechanic is less expensive than a cheap one.

There is one other selling point that must not be overlooked and that is that real estate people and builders will advertise the Red Seal. Every real estate man that has a Red Seal house for sale or for rent, will be sure to advertise the Red Seal wiring as one of the features.

While the local activities including the wiring standards will have to be worked out, each league participating, the Society for Electrical Development has worked out a standard assortment of campaign material. This includes:

A Booklet—"How to Organize a Red Seal Campaign."

Red Seal Signs—Waterproof posters for the outside of the house that has adequate wiring approved by the local league.

Red Seal Labels—Stickers for the meter box as a permanent label.

Red Seal Certificates—Documentary evidence for the builder or owner to use when offering it for sale or rent, showing that the house is adequately wired.

Red Seal Advertisements—Newspaper advertisements to sell the idea to the public, complete with mats or stereotypes.

Red Seal Letters—Form letters with the seal in color, to mail to prospects.

Red Seal Window Trims—for the central station, jobber and contractor-dealer.

Red Seal Stamps and other supplementary publicity.

Information Others Have Asked For

Responsibility Under a Contract

"We signed a contract for work to be done according to blue prints and specifications. After the contract was signed, the owner called attention to a 'heater circuit' to be run for an electric range, an urn heater and a hot plate. No mention of this is made in the specifications. On the blue prints,—among other items of furniture,—is a square marked 'electric range' and a second square marked 'coffee urn' and no marks of any kind for a hot plate. Standard symbols are used designating ceiling openings, switches, cabinets, receptacles, etc.

"Near the 'range' and 'coffee urn' are shown flush receptacles with symbol exactly the same as those in other parts of the building; the same symbol is used where owner says hot plate is to be connected.

"We claim that a heater circuit for these is additional to the contract, for these reasons: (1) No mention was made of a heater circuit in the specifications; (2) no special heater outlet symbol is used in any of the three places; (3) no heater panel is shown; (4) electric ranges, urn heaters and hot plates are not standardized in wattage or amperage, and unless specifically stated, proper allowance cannot be made for such equipment.

"From the above statement, kindly advise whether in your opinion, we are liable for a special heater circuit, or have we fulfilled the letter as well as the spirit of our contract when we install flush receptacles as shown?"

ANS. You state that on the blue-print there was marked an electric range and a coffee urn, although no mention was made of the hot plate, and no special symbol was used for the outlet to serve the electric range and the coffee urn designating the wattage or amperage required for these appliances.

We are of the opinion, however, that you are responsible for wiring of sufficient capacity to serve the electric range and the coffee urn under your contract, as it was your responsibility to ascertain the required capacity for these two appliances before submitting your estimate, as they were shown on the blue-print and you knew there was a possibility that they would require a heavier service.

In the case of the hot plate, since this was not shown on the plans or

Every month the Association of Electragists, International, receives from members and others letters asking for help on some particular problem or for information on how to use to the best advantage the data and other helps developed by the Association. What is a problem to one man probably is a problem to many and for that reason the questions and their answers will appear here monthly.—Editor.

mentioned in the specifications, we cannot see how you could be held responsible for that.

Association Not An Estimating Bureau

"I have a set of plans and specifications for a building to be erected here shortly on which we bid for the wiring. The job has not been let but our bid was so far from any of the others that I am wondering wherein I miscalculated. Can you figure this job if I explain local conditions?"

"I did not use your form of estimating because I have not had time to become familiar with it. Will appreciate any assistance you can give me on this."

ANS. It is not possible for us to undertake the estimating of any jobs for electrical contractors. If we were to undertake this it would soon lead into many complications as we would be setting ourselves up as a central estimating bureau.

We shall be very glad to answer any questions that you may write in regarding the use of the Manual of Estimating, and we believe that a careful study of it on your part will show you how very simple and easy to use this system is.

No Standard Contract Form for Large Buildings

"I am looking for a proposal and contract form for hotel, theatre and office building wiring. Have you such a form or could you tell me where I could get one?"

ANS. No standard proposal form or contract form covering large electrical installation jobs has been provided as usually each job requires a typewritten proposal covering special requirements or special provisions which the electrical contractor wishes to include or which are required in the specifications

of the architect or engineers on the job.

Inquiry of a number of the larger electrical contractors showed that none of them have found it advisable to adopt a standard form for the larger work.

Explanation of Some Estimating Manual Data

"On page 28 of the Manual of Estimating, Table 12, in the column marked 'hours, panel only,' does that mean soldering of lugs or does it also include the cost of putting in the panel?"

"In table 10 in the column marked 'fishing and pulling time hours per 1000 ft.,' does it mean 1000 ft. of pipe or 1000 ft. of cable?"

"The same thing applies to Table 10A, when it speaks of total length of wire in run. Does that mean length of one wire or length of the pipe run; would you consider the length of wire being 300 ft. or 100 ft.?"

"In Table 9 in column marked 'hours per 1000 ft.,' does 6 hours for No. 14 wire mean per 1000 ft. of wire or per 1000 ft. of pipe?"

"On page 23, Table 7, we do not see why in paragraph F 20% is added to the standard time for a motor circuit as compared to paragraph B for a feeder circuit, when both conditions eliminate the time is added of installing in hangers or supports."

ANS. In answer to the first question in regard to Table 12, the column headed "hours, panel only" is intended to cover the time required for mounting the panel and barriers in the box and connecting the panel.

Tables 9, 10 and 10A give the time allowance per thousand feet of wire; that is, for 3-wire feeder installed in a one hundred foot length of conduit, the quantity of wire would be three hundred feet plus the necessary allowance for connections at each end.

In reference to the 20% additional time given in Table 7 for motor circuits, the typical motor circuit is a comparatively short isolated run of conduit and is a job all by itself; that is, even in a large building there are many cases where one motor is located a considerable distance from any other motor, or even if the motors are grouped together, there will usually be not over three or four in one group.

In such cases, the workmen must spend considerable time collecting tools and material, going to the point where

the work is to be done, and picking up and returning tools and material after doing the work. Time is lost in trips after special fittings and in carrying lengths of pipe some distances to a bench, and on account of the small amount of work to be done in one place, much time is spent in planning, and the men do not have an opportunity to get well under way with the work. The job is done before it is well started.

On the other hand, in the case of a feeder run, one has the usual advantages of quantity production. The typical feeder run is long and a considerable number of conduits are usually run together. In proportion to the total amount of work, very much less time is lost in planning the work and in starting and stopping, and tools and materials can be handled much more economically.

After considering carefully all these points, one can hardly say that the additional allowance of 20% for installing pipe for motor circuits is at all excessive.

Voltage Drop on Interior Circuits

"We are trying to assemble some data concerning the voltage drop which is usually allowed in interior wiring circuits. We believe that the following is essentially in accord with the usual practice:

Interior Lighting Circuits: 3 percent total drop between the service entrance and the furthest lamp. Of this 3 percent, 2 percent is allowed between the service entrance and the distribution cabinets; 1 percent is allowed between the distribution cabinets and the lamps.

Motor Circuits: 5 percent total drop appears to be about the usual practice for motor circuits.

"It will be appreciated if you will advise us as to whether or not the above values are in line with such information as you may have."

Ans. The matter of drop in line voltage in order to be discussed intelligently, should be subdivided into:

1. Central station service,
2. Isolated plant service;

and each of these with reference to electricity for light or power service.

If we first consider central station service we find the following conditions prevail: Lights are fed from single phase, while motors over 5 HP are fed from two or three phase.

The central station through the use of induction regulators, feeders and transformers, where a. c. is used, and rotary converters and heavy distribution mains, is able to provide a voltage at almost any location that will be within 5 percent or less of the voltage normally supplied by it.

Therefore, for ordinary one or two family houses where no feeders are run, the minimum size wire No. 14 is more than ample for a current of 15 amps. and for such conditions the voltage drop is negligible.

For apartment houses, public buildings and industrial plants, where a system of feeders is in use, we must design these feeders so as not to permit a variation of more than 2 percent from service to panel.

Experience shows that the size of rubber covered conductor for a certain number of amperes is usually more than ample and at its rated load shows less than 2 percent drop. Where using smaller sizes of varnished cambric, and particularly weatherproof conductors, a preliminary calculation is always good practice.

Drop in voltage from light distribution panels to individual lights is seldom as much as 1 percent unless an exceptionally long run is encountered and then it is good practice to substitute two No. 12 wires in place of the No. 14.

For power work on d. c. motor circuits, if wires are run according to code rules, it is very seldom necessary to check up on rubber covered sizes. For varnished cambric and weatherproof on long runs, it is advisable to calculate it merely as a precautionary measure.

On a. c. work where using low speed squirrel cage motors at the end of a long run, it is absolutely necessary to check voltage drop in order to avoid starting difficulties. The voltage drop should not exceed 5 percent and that percentage should be based on the maximum starting inrush of all the motors or practically six times full load running amperes.

For isolated plants where motors and lights are on the same feeders, particular care must be exercised to maintain a uniform voltage for lights throughout the building. A drop of over 3 percent does not produce good lighting service.

Where a. c. is generated, more care must be taken since the inrush of motors is so much greater and there is no powerful distribution system to fall back

upon. For this reason one can hardly have too much copper in the wiring and all calculations should be based on motors drawing their maximum inrush at one time.

A drop of even 5 percent should be avoided if possible and brought down to 3 percent.

Careful checks should be made on this particularly if weatherproof ratings on copper wire are used.

W. J. SHORE,
Chairman Power Committee

Outlet Boxes for Knob and Tube Wiring

"I am looking for some data in regard to knob and tube work where boxes are specified on each outlet with a clamp to hold the loom in position. We have had one or two of these boxes but do not see how they can be consistently used as the loom is hard to get in the box and the clamps are insufficient to hold the loom.

"We would also like to know in what manner an outlet could be put on an old job with the plastering still intact where the boxes screw on the outside. In what way would you use this with a rosette and not allow the rosette to be the depth of the box from the ceiling?"

Ans. There are on the market a number of different types of outlet boxes which have knockouts for loom. There are also on the market a number of different varieties of loom clamps, any one of which will hold the loom quite securely when it enters the box at an opening of the proper size.

When a ceiling outlet box is installed in an old building, and you do not wish to cut the plaster it is necessary, as you say, that the box should project from the ceiling its entire depth. We believe that you can obtain a box which is about one-half inch or five-eighths inch deep and is provided with ears for attaching a box cover. A number of manufacturers make a quite complete line of rosettes for attachment to either 3 inch or 4 inch outlet boxes. We consider that the best device to use in such a case is a plain porcelain plate with the cord passing through a hole in the center and soldered directly to the branch circuit wires. A plain steel cover for the outlet box can, of course, be used in place of the porcelain covers if you so desire. This perhaps does not make a job having a finished appearance, but drop cords are not commonly used in places where finish is very important.

How Rubin Sells Radio

"A SPOOL of black cotton thread, please," said the customer of the country cross-roads store twenty years ago, and the proprietor immediately had to swear out a search warrant, look behind the cracker barrels, up on the dusty top shelves and back of the canned goods before he could find that black cotton thread.

"A vario coupler, please," said the radio fan to the contractor-dealer four years ago, when radio was little more than a waif left on the doorstep of the electrical industry, and the clerk had to hunt through shelves and bins and drawers before he could make the sale.

Times and customs have changed since then and the radio section of the successful electrical shop is as carefully planned, as spacious and as orderly as the lamp or appliance department or any other that is bringing the dealer large profits. If the contractor-dealer is to continue to capture the cream of the trade this must be so, for the radio-buying public has altered materially even in this short period.

It includes, besides the faithful juvenile radio fan, the head of the family and the women of the home. It is a mature class, one which is accustomed to buying its amusement in the shape of phonographs, player pianos and automobiles, and buying it in nice surroundings. The contractor-dealer in order to compete successfully with the music stores, which have entered radio strongly, must do as well if not better than they in the matter of pleasing displays of sets and parts and accessibility and arrangement of stocks. The customer must not be crowded against a small counter in a dusty corner of the store and every facility must be given for inspecting and testing both complete sets and parts.

One of the electrical contractor-dealers who has been foremost in recognizing and meeting this condition is Louis D. Rubin, president of the Louis D. Rubin Company, of Charleston,



The Radio Part Display Board That Speeds up Sales for the Clerks, Makes it Easier for the Radio Customer to Buy and Often Reminds Him of Just That Other Part He Has Been Meaning to Get for His Set

South Carolina. The company is widely known in the industry for its progressive methods and recently when it was decided to open a complete radio department Mr. Rubin planned that there should exist no easier or more pleasant place to buy radio. Spaciousness, the orderly arrangement of equipments displays and the desire of the customer to test sets were the three main factors he considered in laying out the section.

It was made a department in itself,

occupying a large corner of the store and though it contained a complete display of all radio materials carried in stock, plenty of space was allowed for the comfort of the customer, there being a wide aisle between the parts counter and the display of sets. The use of a railing about the corner, allotted to the complete sets, gives an effect of privacy when a potential purchaser is testing the receiving qualities of some set he is interested in.



A Place Where the Customer Can Try Out a Radio Set as Comfortably and Luxuriously as He Would a Phonograph, Without Being Confused by a Jumble of Exposed Wires and Batteries



Republicans and Democrats Are No More Definitely Divided Than the Displays in the Rubin Store. The Illustration Shows a Section of the Lamp Department Where Each Line of Silk, Metal, Parchment and Glass Lamps Has Its Particular Place

One of the most interesting features of the arrangement is the part display-board, shown in the photograph above, for it has solved for the Rubin company a problem which has bothered the dealer ever since the inception of the radio trade, the problem of securing clerks who were technically equipped to handle radio customers. Many sales have been lost simply because the clerk was unable to show parts which the customer might have bought had his attention been called to them, and in some instances salesmen have even been unable to find, because of their unfamiliarity with radio terms, the article that the buyer called for.

A Silent Salesman

On this board is fastened a sample of every part in stock, with its name plainly pasted below. With the aid of this any clerk can wait on customers, since the average radio buyer knows what he wants and can point it out on the display board. The board also serves as a silent salesman, for it gives the purchaser an opportunity to see any number of other parts which will enhance the receiving qualities of his set.

No phonograph or automobile dealer would expect to sell his merchandise without first demonstrating it and the radio dealer has had to adopt the same policy. Yet the usual radio display is so arranged that it is difficult to test more than one set at a time. In the Rubin radio department the sets are separated so that three or four customers may test sets simultaneously.

Exposed wires and batteries are both

unsightly and confusing to the non-technical buyer, who after all is the person who buys the expensive, complete sets. As the picture below indicates, all wires and batteries have been carefully concealed by the Rubin company and the result is an unusually orderly looking sales floor.

The captain of a trans-Atlantic liner does not watch his barometer any more closely than does Mr. Rubin the one which can be seen on the counter in front of the part display. Among the bugaboos of the radio dealer have always been the appalling shrieks produced by static during demonstrations. The radio fan understands and discounts this condition, but the enthusiasm of the new customer is considerably dampened by experiences of this sort; and it is the new customer who must be attracted and held if the radio business is to go on growing.

By observation of this barometer, which is of the recording type, the salesmen can usually figure twenty-four hours ahead just how good radio conditions will be and can judge their demonstrations by its rise and fall. This has proven particularly valuable for the Rubin company, situated as it is in the coastal section where there is a great deal of static at certain times of the year.

Supplying complete service with every set sold, Mr. Rubin has found, is one of the most effective means of winning and keeping the good-will of his trade. It rarely fails to bring orders for additional equipment that might have been placed elsewhere and in a

number of instances has brought in persons who wished to have the pleasures of radio without the bother of erecting their own sets.

While organizing the radio department, Mr. Rubin carried his planning into all the other parts of the store, on the theory that what is good for radio sales would be good for sales of every article in his stock. The result has been a miniature department store, with definite-divided display spaces for both his major and minor merchandise. Silk lamps, parchment lamps, metal and glass lamps, toasters, irons, percolators, the larger household appliances, all have their places. The system not only makes it easier for customers to select what they want but materially speeds up sales for the clerk, making it possible for him to wait on several people at once.

If Mr. Rubin has ever gone in for writing business mottoes, he has carefully concealed it from his associates. But if he ever does start, his first one will undoubtedly be:

"Order means Orders."

Fooling the Thunderbolt

A common question asked by laymen of electrical contractors who are doing wiring jobs or selling appliances or doing any of the many other things that bring them into contact with the public, is, "What should you do to avoid being struck by lightning?"

Here is an answer, taken from a report submitted to the annual meeting of the National Fire Protection Association.

(a) Do not go out of doors or remain out during thunderstorms unless it is absolutely necessary. Stay inside of a building where it is dry.

(b) If there is any choice of shelter, choose in the following order:

1. Large metal or metal-frame buildings.
2. Dwellings or other buildings which are protected against lightning.
3. Large unprotected buildings.
4. Small unprotected buildings.

(c) During thunderstorms avoid:
Electric light circuits.

Lightning conductors and downspouts.

Screened doors and windows.

Stoves and fireplaces.

Telephones or any metal object that projects through walls or roof.

How to Improve Code Enforcement

A series of questions and answers about local code committees for the benefit of those who want to see the proper attention given to the code in their home towns and local territories

FOR more than a year a new ally of the National Electrical Code has been gathering up momentum—the local code committee. Already such a committee is functioning successfully in a number of places, but many more cities must get behind this movement. For those who are not altogether familiar with this work THE ELECTRAGIST presents answers to a list of eight questions it asked A. Penn Denton, chairman of the Code Committee of the Association of Electragists and member of the Electrical Committee, which has complete authority over code revisions.

Q. 1. What is a Local Code Committee?

Ans. The Local Code Committee is a committee representing the local electrical industry and inspection interests co-operating together in any city or town of the United States and Canada and is formed to improve electrical inspection conditions, by obtaining uniform and rigid inspection of electrical materials and installations, and also to provide for proper observance of the local electrical ordinances and the National Electrical Code.

Q. 2. Why Should There be Local Code Committees?

Ans. This question I have partially answered above, but would add also that there is need for these local committees to provide for proper recognition by the local electrical industry of higher standards in electrical installation work all over the country. For this reason the local code committee should be in many places a sub-committee of the local electric club or league.

Q. 3. What Does a Local Code Committee Do?

Ans. The local code committee should have as its purpose, first of all, aiding in the enforcement of the local electrical ordinances and the National Electrical Code rules. It should also act as a committee to receive complaints of violations of the electrical code, and should be responsible for seeing that such violations are corrected, aiding in this work the office of the local municipal

and underwriters' inspectors. This local committee can also be expected to have a part in preparing and obtaining the passage of new electrical ordinances in those cities where these may be needed, though in the larger cities where electric leagues or clubs may have legislative committees, this latter function more properly belongs to the legislative committee. It is my personal belief that if the local code committee confines its work and efforts more strictly to that of a technical committee dealing principally with engineering problems relating to proper inspection and regulation or electrical installations, it will have all it can do to handle this work well and promptly.

Q. 4. Who Should be on a Local Code Committee?

Ans. The personnel of a local code committee, by that I mean the active committee, should be a contractor as chairman, a representative of the service department of the local power and lighting company, the municipal inspector and the underwriters' inspector. As associate members of this committee there should be one jobber representative, and one manufacturer's representative. The jobber and manufacturer representatives should be official appointees of their respective national organizations, namely the Electrical Supply Jobbers' Association, and the Associated Manufacturers of Electrical Supplies. This recommendation is made for the particular reason that we want the standing of the representatives on the local code committee to be of the very highest, and all members of this committee to receive the backing and support of the united electrical industry and insurance interests.

Q. 5. How is a Local Code Committee Started?

Ans. The local code committee should be organized either by the local contractors' association, or the electric club or league. Up to this time the Association of Electragists through its National Code Committee, has organized all such committees, as the result of a program we started working on one year ago in January.

Q. 6. What Cities Have Started Local Code Committees?

Ans. This question cannot be answered fully at this time as I have not completed this list, in a way that I would want you to publish in the June Electragist. A complete list of local Code Committees should, however, be available in another month.

Q. 7. What Results Have They Had?

Ans. Up to this date the results accomplished by the local code committees organized during the past year, have been to aid materially the local inspection interests in proper enforcement of local electrical codes, as well as creating a finer regard for the rules of the local code and National Electrical Code. The local code committees have also cooperated with the central station interests and inspection departments is already enforcing many of the new provisions of the 1923 National Electrical Code, such as:

The adoption of a standardized externally operated safety type service switch,

The grounding of all electrical services on the neutral wire,

The installation of identified neutral wires in all new building installations since about the first of January, 1924, and,

The adoption of a uniform method of grounding for both the system and equipment grounds.

Q. 8. What do people interested in the Code say about the idea?

Ans. We have received the finest kind of cooperation from the electrical people, the insurance interests and municipal inspection departments in the program we are working on. It is recognized by all electrical people to whom your national chairman has talked regarding the value of local code committees in improving our electrical engineering standards and installation work, as the logical and proper method of improving our installation standards in all localities throughout this country and Canada.

Chats on the National Electrical Code

A Monthly discussion of wiring practice and questions of interpretation, presented with a view toward encouraging a better understanding of the industry's most important set of rules

By HUBERT S. WYNKOOP, M. E.

The Customer's Cutout

Section 806b requires that "where the service fuses are locked or sealed . . . duplicate main fuses or branch fuses connected on the load side of the meter and enclosed in an approved casing or cabinet . . . shall be provided." This new provision accomplishes two purposes: (a) It enables the customer to re-fuse without waiting for the company's trouble man besides (b) giving the inspector an opportunity to find out at any time whether or not the line leading to the centre of distribution is overfused. An approved casing or cabinet is called for because it would be illogical to omit it when the service cutout adjoining is enclosed. Where the service cabinet is grounded, the customer's cabinet also should be grounded, although the Code does not say so. On the other hand, one cannot insist on enclosures for ALL cutouts on the premises merely because those at the service are required to be in cabinets.

More on The New Branch Circuit Rule

I'm trying to get down to brass tacks on the new branch circuit rule. So many conflicting comments are being broadcast that it may be worth while to spend a little time in analyzing a specific case of an apartment house, as estimated by one of our best contractors. The fixtures are an unknown quantity, but the plans give the number of outlets and an experienced estimator has assumed an average load of 80 watts per outlet. He then laid out his circuits—and this fact is very important—in such a way as to allow for extensions and additions; but he has not made any appreciable allowance for riser copper to care for the anticipated additional load!

In this department each month Mr. Wynkoop discusses very informally—and quite at random—some of the more important inspection problems that confront the electragist. While Code Chats positively must NOT be considered as an attempt at an official interpretation of the Code, at the same time THE ELECTRAGIST will welcome such comment as the subjects treated may develop. The information you can give upon local methods—your methods—of solving Code problems cannot help being of great value to all those who are regularly engaged in electrical installation activities.—Editor.

Twice as many circuits as the Code requires have been provided. Why shouldn't he be required to double the copper in his risers as well? Instead, he has loaded his branch circuits to only 2½ or 3 amperes in order to provide for the future; and he wants us to consider 3 amperes per circuit as a present maximum in determining the riser copper!

As an aid to electragists who might care to discuss this subject, I have prepared the accompanying table which each disputant can employ to his own satisfaction in proving his own particular viewpoint—perhaps.

Metal Raceway in Garage

One of the reasons for the prohibition of metal raceway in a garage is the probability that the ignition expert will strip off the capping and tap in here and there. It was felt that if his activities were confined to the outlets we might hope for a better class of outlaw jobs. Later, metal molding was invented, and classed as a metal raceway. Now

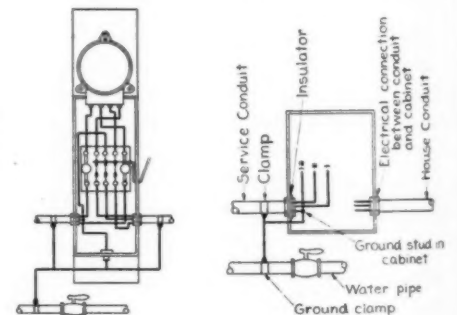
we have an ovalduct with an unwelded longitudinal joint, which is also classed as a metal raceway. If the accessibility of the wiring was the sole objection to metal raceway in garages, perhaps it's time to have the rule changed to let in these newer products, but not the older forms having separable backing and capping.

Two-Phase, 4 Wire in Two Conduits

In a 2-phase, 4-wire circuit, where the two phases are kept separate beyond the point of origin, I see no reason why one phase might not be placed in one conduit and the second phase in another conduit. Section 503k clearly states its purpose to be the avoidance of induction troubles; and such could not occur when phases are so separated.

Single Grounding Wire at Service

I have been asked to picture the first clause of section 905n. Some lighting companies provide a grounding stud in



the service cabinet and the house conduit is electrically as well as mechanically connected to this cabinet.

Is a Cord Pendent a Fixture?

According to the arrangement of the Code, it is. Following a process of elimination, there is no section of the Code other than Fixtures into which the pendent might fit. Considering the schedules which frequently appear in specifications, it is so classed. In searching for a definition of a fixture we shall probably have to call it "a means of support for a lamp holder (socket)." Such supports may be rigid stems, chains, pendent cords—and even outlet box covers—for the outlet box receptacle and its cover form a fixture in

Riser	A	B	C	D	E	F
Outlets, as planned	389	342	462	402	343	294
Total watts: planned outlets X 80	31120	27360	36960	32160	27420	23520
Amps. per side calculated	130	114	154	134	114	98
Amps. per side allowed	150	150	150	150	150	150
Amps. per side under old 660-watt rule	144	126	168	150	126	108
Amps. per side at 10 amps. per branch circuit	165	145	195	170	145	125
Amps. per side at 15 amps. per branch circuit	225	225	300	255	225	195
Circuits under old rule: watts ÷ 660	47	42	56	50	42	36
Circuits under new rule: outlets ÷ 12	33	29	39	34	29	25
Circuits as laid out, "to allow for extensions"	61	54	62	54	56	48

which the stem, or chain, or cord has shrunk to the vanishing point.

Now, then, let's begin all over, and read section 1503b. "Indoor fixtures carrying gas-filled lamps shall be wired with conductors having approved heat-resisting insulation." Should one use heater cord for cord pendants? If not, why? I refuse to answer, on statutory grounds, as I had a hand in recodifying the Code.

Extensions to Circuits

Section 503b makes provision for extension of circuits in buildings of fire-proof construction. Almost always, after the conduit work has been installed and the building is ready for occupancy, one tenant after another requires outlets to be shifted or the switching arrangements changed. The Code now provides methods of doing this without cutting into the fireproofing. In addition to flexible or rigid conduit, it mentions "other forms of metal raceway approved for the purpose." Undoubtedly this would let in oval duct; but does it include metal raceway? We have never been asked to give a decision on this point here in New York; and, like the

lawyers, we shall not attempt to settle the question until we have to.

Connecting A. C. and D. C. Neutrals

In effecting a change-over from direct current to alternating current lighting, while leaving the direct current power intact, at least one company of which I have knowledge is interconnecting the two neutrals at each premises. This is all right for the alternating current system; but how about section 902b, which reads: "Three-wire direct current systems shall be grounded.....but not at individual services."

Sockets Per Circuit

Some people are still hunting through the Code to learn the limiting number of sockets which may be placed on a branch circuit. There isn't any limit. Sockets per circuit mean nothing. Five sockets carrying 250-watt lamps cause a heavier load than forty sockets with 25-watt lamps. The lamp makes the load, not the socket. But we can't control the lamp sizes, and so are obliged to depend upon the fuse. This is the "new thought" argument, which helped to demolish the 660-watt rule.

Power Wiring Table Impractical

Editor, *The Electragist*:

In the last issue of *The Electragist*, under Code Chats by H. S. Wynkoop, there appeared one relating to "Wiring for A. C. Motors."

It appears that the authorities would like to prepare and issue a table giving definite sizes of cables for various types and sizes of alternating current motors.

This subject has been of keen interest to me for the last few years and knowing what I do of alternating current motors and their characteristics, I feel certain that such a table is not only impractical but also would involve a great increase in the cost of electric motor wiring in many cases where such an increase is not warranted by the conditions present.

I have just completed a series of articles on motor wiring, which the Gage Publishing Company has collected and published in a booklet entitled, "Profitable Power Wiring."

A careful study of the various chapters in this book dealing with alternating current motors, will show clearly how absurd it is to attempt to lay down any such set of hard and fast rules for the wiring of alternating current motors.

The current inrush of an alternating current motor is a proposition entirely distinct and separate from the load carried by such a motor in operation.

Let us take the small polyphase squirrel cage motor, ranging from one to five horsepower inclusive, which is commonly started by being switched directly across the line without any intervening starting apparatus.

These motors upon being started draw an inrush of anywhere from five to six times full load running, regardless of the load to be started. The duration of this inrush, however, varies inversely as the amount of starting torque required; that is, for a load of light and easy characteristics, such as a small blower, the acceleration will be rapid and the duration will be brief.

For a load of heavy starting character, such as heavy shafting or high speed woodworking machinery, the duration of this inrush will be five or six times as long.

In both instances, the amount of inrush will be identical only the time involved will be different. Where in the first instance a 30 ampere fuse will hold, in the second instance a 30 ampere fuse

will blow out. It is accordingly plain, therefore, that to require the same size of wire for both of these conditions will mean that for light starting duty we have excessive copper, conduit, switches and fuses.

Let us now consider the polyphase squirrel cage motors that range from 7½ HP and upward, which are started with a compensator or autostarter, which is nothing more or less than an auto-transformer with taps taken out at various points so as to impress anywhere from 25 to 80 per cent normal voltage on the terminals at starting.

These compensators or autostarters are commonly equipped with three different taps so that it is possible to start the motor from any one of these taps and also if necessary direct across the line.

Under these circumstances, with the same compensator and motor it is possible to get four distinct and different inrushes depending on how the motor is connected up.

The manufacturer states on the compensator, if one tap is not sufficient to start the motor, reconnect to the next higher tap. Therefore, if any set of arbitrary ratings for conductors were established they would have to be for the worst condition, which would be that involving the most starting inrush.

This would again penalize the customer whose motor was connected to a motor generator set or blower or such similar light starting duty apparatus.

We may next consider the slip ring motor, which produces a high starting torque with a moderately low starting inrush.

Here again the customer would suffer a penalty by being forced to employ copper, conduit, fuses and switches sufficiently heavy for the severest starting duty.

It is plain and obvious therefore that no set of hard and fast rules will serve this purpose because there are many different and various types of machinery to be driven, some involving the heaviest possible starting torque, others requiring even less than full load current to bring them up to full speed.

I trust this letter will be of interest to you and feel that discussion of this question will be of great benefit to all who have occasion to install and wire alternating current motors.

WILLIAM J. SHORE,
Chairman, Power Committee,
Association of Electragists.

Home Lighting the Big Opportunity

WHERE does the contractor make the most money—wiring a new house or one already built?

For which class of work does he get paid quickest?

Last month there was announced at the annual convention of the National Electric Light Association at Atlantic City a plan which should prove a regular gold mine for up and doing electragists. Starting in September the electrical industry will throw the combined weight of its several branches into a National Home Lighting Educational Campaign which is to last until the end of the year.

Everything in the campaign will be educational and will be pointed towards creating a desire on the part of home owners for better lighting. The opportunity to cash in on this will be limited only by the individual electragist's own efforts.

There are 12,000,000 homes in the country already wired. A great many of these were wired in the nineties. More than half were wired before the war. None of those wired previous to the war have the advantages of real good lighting, let alone convenient and accessible wiring. The convenience outlet, as we know it, was then unknown. Wall switches were sparingly used. Side wall lighting was almost unknown in the average home, while table and floor lamps lacked the graceful proportions of today. Also, the lack of baseboard outlets made their use far less convenient and desirable than today.

Even of the houses wired in the past ten years few enjoy the full advantages of good lighting. Too frequently, especially in speculative operations, the wiring and lighting has been cut to a minimum.

In other words, in almost every home in the country there is an opportunity for some extra wiring or rewiring work. The approach to this work will be made easy because in every home this fall there will be a consciousness of the meaning of better lighting. The minds of people will have been opened to the idea and will be more receptive to a suggestion.

A big market is opening up and back of it with the other bodies is the As-

sociation of Electragists. The idea was initiated by the lighting equipment manufacturers, sponsored by the national electrical associations and operated by the Lighting Educational Committee, of which J. E. Davidson, Omaha, is chairman.

The elements of the campaign tie-in a great many interests. Already a com-

guage, show how eyestrain results from improper lighting and suggest ways to improve lighting.

The contest calls for a detailed study of the lighting of the child's own home and of the homes of two neighbors and the setting down of a plan of the lighting in each home; the cutting out of fixtures shown in primer and pasting them on pictures of rooms shown, in such a way as to secure good lighting in each room and finally, the writing of an essay of not over six hundred words.

It is expected, of course, to enlist the support of local school authorities and it is a foregone conclusion that once a child becomes a contestant that the parents also

will be interested.

In addition to the big national prize, it is expected that the local campaigns will involve local prizes. Cleveland, for instance, has set up a plan which provides for 50 prizes totaling \$1,800, the first being tuition for one year in college. The winners of local prizes, of course, are also to be eligible for the national prize.

Cooperating with the Lighting Educational Committee is the Society for Electrical Development, which will furnish fieldmen and handle the publicity except that in the national magazines.

Manufacturers, jobbers, central stations and electragists—all are interested, but first of all the electragist will benefit because it involves not only the profit on new fixtures and lamps, but also in most cases an extra wiring job.

Electrical Superiority

In a personal letter to Charles R. Skinner of the New York Edison Company, Thomas A. Edison recently said that he believes after a careful comparison of costs that the electric delivery truck for city work is cheaper and better than the gasoline truck or a horse drawn vehicle.

While electric delivery trucks are not a product to be handled by electragists at present this personal comment on the subject by the electrical wizard is significant of the progress being made to make electric power supreme in all lines of endeavor.

CAMPAIGN FEATURES

School Child \$15,000 Essay Contest
National and Local Advertising
National and Local Prizes
Education of Public
Model Electrical Homes
Large Volume of Rewiring and
Fixture Business

petition has been carried out through the leading architects of the country for plans for a \$10,000 home and a \$5,000 bungalow. Plans for these model homes had to be worked out in connection with correct lighting principles. The selection of the prize houses is being made as we are going to press. The plan therefore starts off with educational work among the architects.

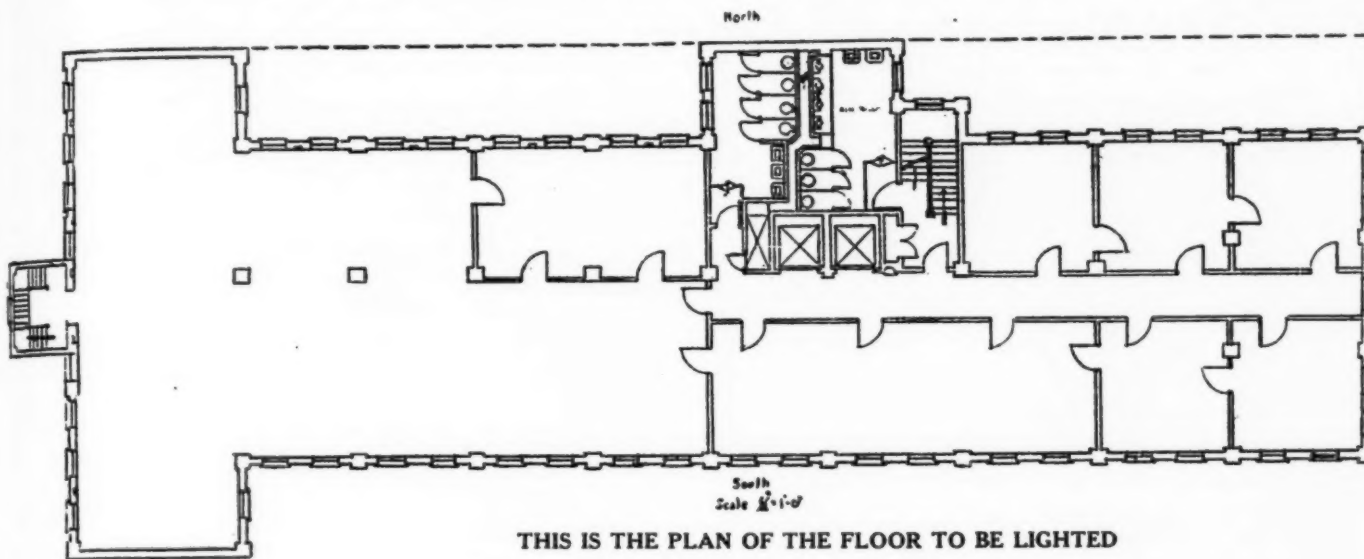
The prize homes will be known as the 1924 Model Electrical Homes, the plans for which will be used in every community staging an electrical home as part of the campaign.

The campaign will have both a national and a local aspect. To show how the local activity can be set up a plan book will be available. Publicity on home lighting will be available for the local newspapers. Window display material will be furnished to dealers.

National advertising will start in September in the large circulation national magazines and it is hoped that the local interests will tie-in with local publicity at the same time.

The major educational activity is centered in a prize essay contest for school children starting in September and continuing until December 31. The contest involves a study of home lighting, a lighting layout and a short essay. The first prize is a \$15,000 Model Electrical Home. In order to work intelligently each contestant will be furnished with a Lighting Primer which will set forth the correct principles of home lighting in simple, direct lan-

How Would You Light This Floor?



IN studying the lighting of a modern office building I will take one floor as typical and suggest some forms of illumination for same.

The building is a City building in the business section, with windows on the south side.

The floor is the 3rd floor, ceiling height—11 ft.;—color of walls—dark cream;—color of ceiling—white.

The lighting discussed by the writer will be from a contractor's standpoint and I will use standard commercial luminaires as examples.

I will not attempt to emphasize any particular make but simply types, also from a wiring standpoint to show controls, and a few remarks on the manner of wiring a building.

The writer recognizes the fact that it is practically impossible to plan the lighting of any particular room or floor

This floor plan of a typical business building was given to an illuminating engineer, a fixture manufacturer and an electrical contractor to lay out a system of lighting. The solutions were presented at a meeting of the New York Section of the Illuminating Engineering Society on May 8. The solution of H. A. Sinclair, secretary and treasurer of the Tucker Electrical Construction Company, here given, brings out not only the lighting but also the need for adequate wiring so that the lighting may be used to advantage and with greatest convenience.—Editor.

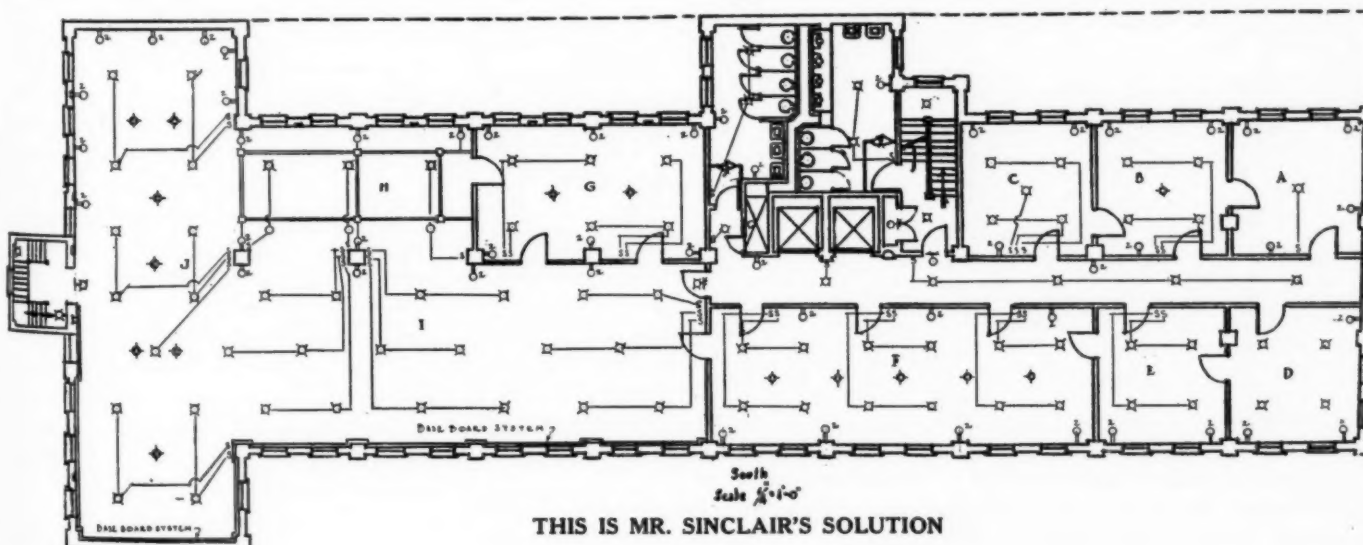
that would suit all tenants, and the aim of this article is to show various locations of outlets, styles of luminaires, and in some cases to plan the lighting

of a room that will meet all conditions.

The various styles of lighting suitable for office buildings are—direct lighting, semi-indirect lighting, entirely indirect, closed globes and luminaires carrying their own reflectors.

The plan that appears below shows various locations of outlets but does not give the size of luminaires or wattage. My own thought is that it is better to plan the outlets with liberal capacities, complete same and then put in luminaires to suit the requirements of the tenants.

No matter what illumination is installed in a room, convenience outlets should be installed so that current may be taken to desks for adding machines or desk lights, or for any other purpose required. All convenience outlets should be located about four or five feet above the floor so that the current may be used



either on desks or for fan outlets. All receptacles for convenience outlets should be duplex.

In Room A I have one large center outlet and a few convenience outlets. This would be the simplest plan for any office, and no doubt there would be sufficient illumination but the location of outlets may not be suitable.

Room B has four outlets on the ceiling so distributed that there is sufficient illumination to satisfy the wishes of most tenants. Also in this room there is a floor outlet in the center from which lights may be taken to desks.

Outlets to Suit Any Occasion

Room C I think is the best and has outlets that should suit any occasion that might arise. There are five outlets in the ceiling, one in each corner, one in the center, and from this distribution suitable lighting should reach any portion of the room. Luminaires may be installed on one or more of the outlets as occasion demands, but if all of the luminaires are installed as shown in Room C there should be sufficient lighting so that desk lights would not be required. A few convenience outlets in this room are suitable for fans or other purposes, a matter that the individual tenant may settle.

I am inclined to think that the entire indirect illumination is the softest, gives the least glare and is the best suited to the eyes. This, of course, requires more current than any other form of illumination and costs more to operate. It has one distinct drawback. It is necessary to clean the interior of the luminaires frequently, certainly every two weeks, preferably once a week. If this is done the illumination is practically perfect. The writer has used numerous kinds of luminaires in his office and prefers this to any other he has had experience with.

Another type of luminaire is the one entirely enclosed. This has considerable advantages and in fact is practically free from dust. It does not need the attention the others do, and if proper glass is selected the lighting is very efficient and has very little if any glare. The luminaire carrying its own reflector is also very efficient.

Location of Outlets

The wiring layout shows the location of outlets that I suggest would be suitable for a building of this character. I have indicated in certain rooms switch control and it will be noted that the two outlets near the windows are on one

switch and the two inner outlets on a separate switch. In some cases it may be found advisable to install electrolier switches. In Room D I have omitted the switches entirely. The lighting is similar to Room B. In this room it is suggested that pull chains be used so that each luminaire may be turned on separately for the convenience of each individual worker.

A very important feature in planning the lighting and wiring is to so arrange the outlets and switches that a tenant can move in and find sufficient illumination with practically every point covered.

For most rooms on the plan it will be noted that no wall outlets are provided. In making changes of partitions the cost of moving wall outlets is a very large expense and I have therefore endeavored to cover the lighting through ceiling lights only. It is, of course, impossible to arrange the wiring so that there will be no changes when tenants move in but this I have reduced to a minimum.

Floor outlets are provided for dictagraphs and these are shown in some of the rooms. The control of hall lights by means of switches explains itself. Stairs, exits, fire escapes and elevator lights should be controlled from the engine or superintendent's room. I would emphasize the fact that there cannot be too many convenience outlets, and it will be noted that these are located on the outside and hall partition walls.

Wiring of the Building

Buildings of this character are generally wired in rigid iron conduit, the conduit forming raceways in which wires are easily installed. Changes, however, in location of outlets are generally very difficult and costly. There are several systems in use to reduce this to a minimum, as follows:

First, a flexible system known as the Under Floor Duct System. This consists of a U shaped fibre piece laid in the floors when the building is built, with junction boxes at various locations, the conduit being of sufficient size for a number of circuits. The floor of this conduit is the cement, that is, the U shaped conduit is laid with the edges down. With this plan, floor outlets can be taken out at any point where the conduit runs by making a hole through the cement floor into the conduit, then installing a suitable outlet box in the floor and pulling in the wire. The Under-

writers require that armored cable be used in this system. Plan of this is shown in Room H.

Another system that has obtained considerable endorsement is one in which a pocket or a box is inserted in place of the baseboard, usually on the outer wall, so arranged that the cap may be taken off and connections made anywhere in the base after the building is completed. Receptacles may be inserted in this base for convenience outlets at any point desired. This base is connected by means of conduit to the cutout box and also to the floor outlets or other outlets required. This system has been extended and developed similar to the Under Floor Duct System using a square steel tube laid under the floors instead of fibre and outlets taken off in the same manner. This system is practically a conduit system, standard rubber-covered wire being therefore permitted. This system is shown in Room J on the floor plan.

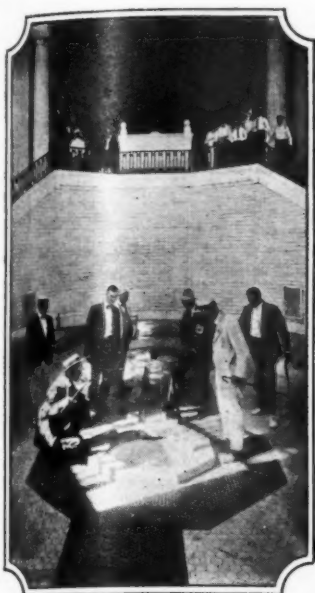
New Wiring System

There is also a new system lately devised for wiring which I think should be mentioned. This consists of forming raceways for wires without conduit; rubber tubes being laid in the cement forms wherever necessary or required. When the cement is poured the tubes are buried in same. After the cement is set the rubber tube is withdrawn leaving a clean raceway for the insertion of wires. This system has been worked out in detail and appears promising. It has not yet been passed by the Underwriters' Laboratories but the New York Board permits the use of ordinary rubber-covered wires in the raceways.*

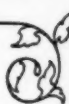
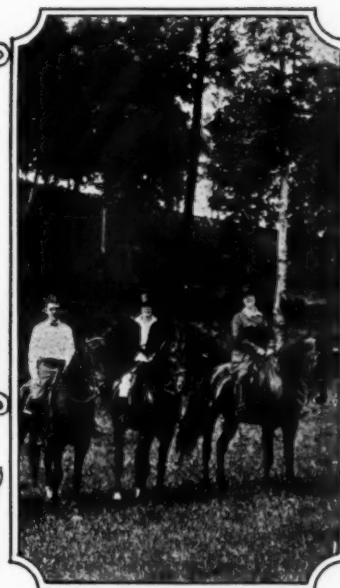
Plan of a floor is submitted giving the writer's ideas as to suitable illumination of an office building. The amount of wattage at each outlet is not mentioned but a liberal amount of current should be allowed at each. Also it seems advisable that all rooms should have at least two circuits. It may be thought by some that there are more outlets shown on the plan than are necessary but it has been the intention and aim of the writer to indicate a sufficient number of outlets for any purpose required.

In this rather rambling talk I have attempted to bring out a few of the principal features of lighting an office building and am glad if I have given anything of value to the industry.

* (This system is described in this issue for the first time, see page 23.—Editor).



Vacationing at the Convention



POLISH up your golf game!

Get that tennis racket restrung!
Hunt up those riding breeches!
Don't forget that film for the camera!
And make your plans now to attend the annual convention.

Tending to business has never hurt anyone and a vacation is always welcome so that the union of the two ought to please everyone. Electragists are going to find this rare combination at the twenty-fourth annual convention of the Association of Electragists—International, to be held at West Baden Springs, Indiana, the week of September 29.

For many years West Baden Springs has been famous internationally for the health-giving water that bubbles from the earth there and in recent years there has grown up around this a resort with recreational and convention advantages second to none. The great West Baden Springs Hotel, with its huge, glistening dome that can be seen for miles, offers every facility for the comfort of its guests.

The rolling Indiana hills roundabout the hotel allure with opportunities for almost all the outdoor sports.

On the crest of the Cumberland hills lies a sporty nine-hole golf course with fairways difficult enough to make it interesting for anyone and greens that make it a pleasure to go down in even fours. The center illustration above shows the ninth green. Between shots the golfer can see far across the

valley of the Ohio River to the picturesque ranges of Kentucky and Tennessee, softened to a blue haze by the distance. The first tee is three hundred feet above the hotel grounds. The ascent is gradual to the sixth tee, the high point of the course, and one of the highest points in the state. The air is bracing and stimulating throughout the season and particularly balmy at the beginning of October, when the Electragist convention is arranged for.

A feature that has recently been added is the indoor putting course laid out in the great inner court or Pompeian Room.

For the tennis lover there are three beautiful courts as carefully groomed as a Derby winner.

Next to golf, however, horseback riding is one of the most popular pastimes. The surrounding country has roads to suit everyone, from pleasant country highways running through fields and orchards to shaded bridle paths that lead off into a rugged wilderness. Spirited riding horses, such as those seen above, can be obtained from the well-equipped stable maintained by the hotel. Well-paved state highways invite the motorist and for the electragist who wishes to drive to the convention—a large number from nearby states intend to do so—there are facilities for garaging 250 cars. The sight-seer will find many things to interest him, among them a series of caves not far from the hotel, which boast of crystal

ceilings and mineral tinted walls and must be explored in the approved style with candles that throw grotesque shadows over the queer, geological formations.

The springs, one of the most famous being illustrated above, are three in number, a competent physician being in charge to prescribe treatments.

In the casino are six bowling alleys, billiard and pool tables and a shooting gallery, while a large modern swimming pool is always ready for those who want to exercise and cool off at the same time.

That the electragist, who attends this twenty-fourth and best of all his conventions, may enjoy the opportunities for play that West Baden affords, all business meetings have been arranged for the morning, leaving the afternoons and evenings free. In addition to the natural recreational advantages, the program committee is hard at work on special convention features, such as dances each night, card parties for the women, sight-seeing tours, a golf tournament, moving picture shows and everything else that will make the week of September 29 the shortest electragists have ever known.

So pack your brief case with notes on the problems you intend discussing at the convention. But don't forget your vacation tools either!

As It Seems to Us:

How Do You Do

This is our first issue of THE ELECTRAGIST and we hope you will like it. There are a few changes in the appearance of the magazine to make it a little more attractive. Of course, we aren't satisfied and from time to time little improvements will be made.

The only thought we want to leave is this: THE ELECTRAGIST is your paper. You can make it what you will. We look for letters from you just the same way we used to look for letters from home when we first went away to school.

If you have any problems, tell us about them—maybe we can help you.

If you have done anything you are proud of tell us also and we'll tell everybody else.

If there is anything you would like to see us do, tell us. We don't promise to do everything, but it would certainly help a lot to have your suggestions.

Once more—This is your paper.

Don't Give Up

It's awfully hard sometimes to know what is the right thing to do. When an electragist hears about a city job and he writes the specifications and gets in touch with a manufacturer to make a lighting layout and he works with the city council and his recommendations are accepted—with thanks—and then peddled around the other contractors one of whom gets the job—what is the electragist to do? His natural inclination is to cuss out the manufacturer for selling the units to the other fellow and say, "To h— with service. Go get the job."

But don't do it. Don't blame the manufacturer. He couldn't control the city council. Blame the unscrupulous city fathers who couldn't be trusted—and next time give service just the same, but don't show all your cards.

The Price of An Irish Stew

Dinty Moore's was formerly a famous barroom in New York. Today it is an equally famous restaurant. It is the only restaurant in the world where they charge a dollar and a half for an Irish stew and get it. Yes, and a line forms each night waiting for a chance to eat there.

Within a block there are any number of places where one can get an Irish stew for a third of the price and less. Why don't the people flock to the other places? Just because they know that the best stew is to be had at Dinty Moore's.

Now it seems like a far ways off from wiring, but it isn't. The man who does the best wiring job and lets it be known that it is all quality will get a real price and plenty of work—just like Dinty. The public is willing to pay provided you have the goods. Sell quality jobs. That's where the profit lies.

All Metal Installations

Last year the Association of Electragists went on record at its annual convention as favoring an all metal wiring standard. There are a number of cities that now require all metal installations and hundreds have all metal zones.

If an all metal installation is necessary for safety to person and property in one part of a city, why isn't it necessary in all parts?

There have been objections to metal in certain classes of construction, particularly residential, for the most part on the grounds of cost. However, the amount of information on the cost of metal installation in houses is so meagre that there are not sufficient grounds for making cost comparisons unfavorable to metal. Some real data on metal installation, however, will soon be available as the association has just engaged Arthur Abbott as technical director to make this study.

There are still some who hold that metal systems are unsafe in dwelling houses because some gas and water companies object to having the wiring grounded on the pipes because of electrolysis. As a matter of fact electrolysis has but a slight chance of occurring first because the service in most places is alternating and, second, because even if there was a ground or a d. c. service the amount of leaking current would be very small.

The all metal standard is coming. Don't get in its way, but get aboard the band wagon.

When the Light Company Sells Appliances

A survey recently made by the Electrical World showed that where the central station was actively merchandising appliances, that the contractor-dealer enjoyed a good retail trade. Where the central station was not pushing appliances, the sale locally was not large and what there was, was mostly done by non-electrical stores.

At first thought this is rather startling, because it is contrary to what you hear from many contractor-dealers. But think a moment, isn't it reasonable?

Where the central station is an active merchandiser, the public is better sold on appliances and the demand is better. Moreover, the central station advertising—directly or indirectly—carries the thought that appliances should be purchased from electrical people so that the proper kind of service will be secured.

Also, the central stations are always closer to the contractor-dealer than they are to the non-electrical men.

For the good of all the facts show that the central station should merchandise and the more actively the better, always with the proviso, of course, that it be done on a fair basis.

ORGANIZATION ACTIVITIES

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary	State	Chairman	Secretary
Ontario, Canada:	Harry G. Hicks, 203 Church St., Toronto	J. A. McKay, 24 Adelaide St., W., Toronto	Maryland:	A. C. Brueckmann, Keyser Bldg., Baltimore	C. Philip Pitt, 7 St. Paul St., Baltimore
British Columbia:	S. E. Jarvis, 570 Richards St., Vancouver	R. A. Graham, 929 Pender Street, W.	Michigan:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
California:	Victor Lemoge, San Francisco	Walter F. Price, 3188 Call Bdg., San Francisco	Missouri:	A. J. Dunbar, Frisco Bldg., St. Louis	G. E. Haarhaus, St. Louis
Colorado:	J. Fischer, 213 15th St., Denver	H. Alex Hibbard, E. & C. Building, Denver	New Jersey:	Geo. E. Davis, 23 Central Ave., Newark	
Connecticut:	Tryon Smith, 247 State St., New London	H. R. Harper, 635 D St., N.W., Washingt'n	New York:	F. A. Mott, 29 St. Paul St., Rochester	H. F. Janick, 29 St. Paul St., Rochester
District of Col.:	Frank T. Shull, Elliott St., Washington	Charles E. James, Fort Pierce	N. & S. Carolina:	N. L. Walker, Raleigh	F. E. Robinson, Charlotte
Florida:	Preston Ayers, Orlando	A. I. Clifford, 507 Odd F. Bldg., Indianapolis	Ohio:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefer, 939 E. McMillan St., Cin'nati
Indiana:	T. F. Hatfield, 102 S. Meridian St., Indiana's	I. G. Marks, 619 Jackson St., Topeka	Pennsylvania:	R. W. Keck, Allentown	M. G. Sellers, 1518 Sanson St., Philadelphia
Iowa:	Louis L. Corry, 510 Brady St., Davenport	Arthur Tucker, 619 Jackson St., Topeka	Tennessee:	P. W. Curtis, Chattanooga	J. A. Fowler, 118 Monroe Ave., Memphis
Kansas:	C. S. Smallwood, 1017 N. 5th St., Kansas City	I. G. Marks, 619 Jackson St., Topeka	Texas:	T. L. Farmer, 1809 Main St., Dallas	Charles W. Graham, 1642 Bryan St., Dallas
Louisiana:	Robley S. Stearnes, 624 Carondelet St., N. Orleans	I. G. Marks, 619 Jackson St., Topeka	Wisconsin:	L. W. Burch, 202 E. Wash'n Av., Madison	H. M. Northrup, 25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
ALABAMA				
Birmingham	J. R. Wilcox	313 North 19th St.	Tuesday 10 a. m.	Members' Stores
Montgomery	P. W. Crump	14 S. Court St.	Mondays	
ARIZONA				
Phoenix	F. C. Hoepfner	Hoepfner Elec. Co.		
CALIFORNIA				
Anaheim	Mr. Waite		Each Week, Friday	
Covina	F. Rambo		1st & 3rd Monday	Ontario
Fresno	Clyde F. Smith	1162 Broadway	Noon Daily	Goodfellow's Grill
Fullerton	J. A. Lenzinger	Brea, Calif.	Thursdays	Garden Grove Hotel
Long Beach	E. Cummings	So. Cal. Edison Co.	Tuesdays	Recreation Park
Los Angeles	Helen I. Mikesell	1109 1/2 S. Hill St.	Tuesday 8 p. m.	1109 1/2 S. Hill St.
Oakland	Lawrence R. Chilcote	351 Twelfth St.	12 Noon, Thursday	Builders' Exch.
San Francisco	E. E. Browne	313 Fifth St.		States' Cafe
South Pasadena	J. Jacobs	1128 Mission Street		Cham. Com. Bldg.
COLORADO				
Colorado Spring	Matt Whitney	208 N. Tejon St.	On Call	
Denver	H. Alex. Hibbard	E. & C. Building	2nd Tues. and 4th Thurs.	E. & C. Building
Pueblo	H. Ashcraft		2nd Tuesday	Commerce Club
CONNECTICUT				
Hartford	A. A. Angello	473 Park St.	First Tuesdays	Hotel Bond
Waterbury	D. B. Neth	Conn. Light & Power Co.	2d Tuesday Evening	
DISTRICT OF COLUMBIA				
Washington	R. W. McChesney	Munsey Bldg.	2d Thursday	Potomac Elec. Power Co.
FLORIDA				
Jacksonville	M. A. Ladd	Stinson Electric Co.	1st Tuesday	108 W. Bay Street
Miami	C. E. Pullen	Pullen-Zohl Co.		
GEORGIA				
Atlanta	W. W. Barr	Ga. Ry. & Power Co.	12:30 Friday	Dafodil Res.
Savannah	Sylvan M. Byck	141 Bull Street		
ILLINOIS				
Chicago	J. W. Collins	160 North LaSalle St.	4th Wednesdays	11 S. LaSalle St.
Master Contrs. Ass'n	F. J. Boyle	31 West Lake St.	1st Wednesday	Y. M. C. A.
Decatur	E. O. Weatherford	114 E. William St.	Saturday 2 p. m.	Arcade Building
East St. Louis	C. F. Broderick	317 E. Broadway	1st & 2nd Tuesday	Post Hall
La Salle	Edward Blaine	238 S. Jefferson St.	Mondays	Endres Hotel
Peoria	L. B. Van Nuys	18th & Broadway	2d & 4th Wednesday	214 1/2 No. 6th Street
Quincy	John Harbison	407 E. Adams St.	Monthly	411 1/2 E. Adams St.
Rock Island	John Weishar	613 Tyler Street		
Springfield	Chas. A. Meador			
Streator	William Schroder			
INDIANA				
Evansville	O. P. Seitz	1814 Riverside Ave.	Mondays	Members' Offices
Gary	A. B. Harris	570 Washington St.	1st and 3rd Tuesdays	Chamber of Commerce
Indianapolis	R. E. Snyder	704 N. Alabama St.	2d & 4th Monday	Labor Hall
Peru	J. B. Johnston	West 5th Street	1st Tuesday	B. & T. Ex. Building
South Bend	Mr. Moran, Jr.	832 N. St. Louis	1st Thursdays	Asso. Bldg. Cont.
Terre Haute	Carnoy Chess	523 Ohio St.	Wednesday Evening	
Warsaw	L. F. Meyers	120 E. Market St.		
IOWA				
Davenport	Louis F. Cory	211 Fifth St.	Monday 6 p. m.	Chamber Com.
Sioux City	E. A. Artz	600 Bluff Street	Monday 6 p. m.	Members' Offices
Waterloo	H. L. Hileman			
KANSAS				
Arkansas City	E. C. Simmons	146 S. Santa Fe Ave.	Mondays	Members' Offices
Salina	Geo. H. Shank	816 Kansas Ave.	1st Thursday	Elks' Club
Topeka	H. S. Lee	446 North Main	Monday Noon	United Elec. Co.
Wichita	L. A. Harris		Every Tuesday 7:30	
KENTUCKY				
Louisville	Chas. Daubert	921 S. Third St.	Tuesdays	B. of T. Building
Paducah	W. R. Kitterjohn		Last Thursday	
LOUISIANA				
New Orleans	S. J. Stewart	531 St. Joseph St.	2 p. m. Monday	612 Gravier St.
Shreveport	R. L. Norton	620 Marshall St.	Wednesdays	Builders' Exchange
MAINE				
Portland	Lyman P. Cook	12 Free Street	On Call	Graymore Hotel
MARYLAND				
Baltimore	George Robertson	Park Bank Bldg.	2d and 4th Thursdays	Southern Hotel
MASSACHUSETTS				
Fitchburg	R. M. Gowell		1st Monday	Fay Club
Haverhill	H. W. Porter	24 West St.	2nd Monday	El. Light Station
Malden (Everett & Medford)	Harry J. Walton,	Malden Elec. Co.	Monthly	Malden Elec. Co.
Newton	C. L. Howe	897 Washington St.	2d Monday ea. month	Various Places
Pittsfield	Wm. J. Cullen	West St.	Monthly	Members' Offices
Springfield	A. R. Tulloch	11 Court House Pl.		Chamber of Comm.
Worcester	J. W. Coglin	259 Main St.	2d Thursday	44 Front Street
MICHIGAN				
Detroit	H. Shaw	613 Lincoln Building	Last Thursday	G. A. R. Hall
Flint	J. Markle	718 S. Saginaw		Association of Com.
Grand Rapids	Henry Romyn	40 Ionia Av., N. W.	Tuesday Noon	Chamber Commerce
Kalamazoo	M. Randall	Exchange Place		
Saginaw	E. T. Eastman	209 Brewer Arc.		

The Electragist

ORGANIZATION ACTIVITIES—(Continued.)

STATE AND CITY:	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
MINNESOTA				
Duluth	D. Ehlert	210 W. 1st St.	Subject to Call	Builders' Exchange
Minneapolis	W. I. Gray	511 S. Third St.	2d & 4th Monday	Elk's Club
St. Paul	E. Hoseth	993 Selby Avenue	2d & 4th Tuesday	
MISSOURI				
Kansas City	A. S. Morgan	4 E. 43d Street	2d and 4th Tues.	University Club
St. Louis	E. Bowman	644 Century Building	1st Wednesday	American Hotel
NEBRASKA				
Lincoln	G. G. Kingham	142 S. 12th Street	1st & 3rd Monday	C. of C. Building
Omaha	E. H. Brown	1818 Harvey St.	2d and 4th Thursdays	Builders' Exchange
NEW HAMPSHIRE				
Portsmouth	F. C. Hatch	Kittery	2d & 4th Wednesdays	
NEW JERSEY				
Atlantic City	F. P. Wright	16 Ohio Ave.	1st Thursday	Malatesta Hotel
Long Branch	Chas. Maggs	462 Bath Ave.	1st & 3rd Mondays	Commercial Hotel
Newark	John J. Caffrey	435 Orange St.	1st Monday	283 Plane St.
Paterson	H. M. Desaix	88 Ellison St.	Last Friday	P. S. Building
NEW YORK				
Albany	E. A. Stephens	71 Trinity Place	3rd Thursday	Pekin Restaurant
Binghamton	A. H. Hyle			
Brooklyn	H. F. Walcott	Pacific St. and 3d Ave.	1st & 3rd Wednesdays	Johnston Building
Electric Club	A. Stone	503 Myrtle Ave.		
Buffalo	H. H. Howell	54 Niagara St.		
Cooperstown	B. B. St. John	Oneonta	3rd Tuesday	Vanon
Endicott	A. H. Hyle	Binghamton	Tuesdays	Chamber Commerce
Glens Falls	W. F. Coombs	21 Main Street, S.	3rd Monday	Black Bear Rest.
Jamestown	Henry Lund	309 Main Street		
Nassau-Suffolk	Edwin M. Seaman	Mincola		
New Brighton	E. L. Taylor	Tottenville	1st Thursday	Building Trades
N. Y. Section, No. 1	J. W. Hooley	70 East 45th Street	2nd and 4th Wednesdays	226 W. 58th St.
Independent	Albert A. A. Tuna	127 East 34th St.		
Section No. 3	L. F. Luedicke		3rd Thursday	
Oneonta	B. B. St. John		Monthly	
Rochester	Theo. Benz	278 State St.	2d and 4th Thursdays	Saratoga and Glens Falls
Saratoga Springs	W. F. Camp	So. Glen Falls		
Syracuse	Fred P. Edinger	440 South Warren St.		
Schenectady	Mr. Spengler	McClellan St.	Subject to Call	St. George, S. I.
Tottenville	W. Taylor	Tottenville, S. I.	1st and 3rd Thursdays	Gas Office
Troy	H. W. Boudey	First Street	1st Tuesday	Elk's Club
Utica	W. C. Ballda	228 Genesee Street	1st Thursday	
Yonkers	Mr. Mayer	Manor House Sq.	Monthly	
NORTH CAROLINA				
Charlotte	F. E. Robinson	205 N. Tryon St.	Tuesdays	Members' Offices
OHIO				
Akron	Harvey Uhl	211 Water Street	Alternate Thursdays	2nd Nat. Bank Bldg.
Bellaire	J. Blumberg	Bellaire	Call of Secretary	Bellaire
Canton	H. S. Hastings	Industrial Corporation	1st Tuesdays	Industrial Com.
Cincinnati	W. R. Keefer	939 E. McMillan	Tuesday 3 p. m.	Chamber of Com.
Cleveland	Frank Monahan	1761 East 12th Street	1st and 3rd Thursdays	Hotel Statler
Columbus	A. G. Sims	Sims Elec. Co.	2nd Wednesdays	Bldrs. Exchange
Dayton	Clarence Carey	1107 Bron Ave.	2d & 4th Mondays	Builders' Exchange
Masillon	F. D. Mussop	309 E. Main St.	Weekly	Members' Offices
Springfield	M. H. Gray		On Call	Various
Steuvenville	D. C. Hartford	16 Huron Bldg.	1st Wednesday	Nat. Exchange Bank
Toledo	J. Kelly	Builders' Exchange	Every Wednesday 8 p. m.	16 Huron Building
Youngstown	F. F. McBride		Monday Noon	Y. M. C. A.
OKLAHOMA				
Tulsa	C. W. Cowan	Masonic Bldg.	Every Monday	Masonic Bldg.
OREGON				
Medford	S. C. Clark	Cal. Ore & Power Co.	3rd Monday	
PENNSYLVANIA				
Allentown	(See Bethlehem)			
Bethlehem	A. W. Hill	500 Main Street	Last Thursday	At call of President
Catasauqua	(See Bethlehem)			
Chester	Wm. J. MacMillan	12 W. 3d St.	2nd Thursdays	Chester Club
Dubois	C. E. Blakeslee		Monthly	
Easton	(See Bethlehem)		Monthly	
Erie	Earl Stokes	Builders' Exchange		Builders' Exchange
Lancaster	A. Deen	434 S. Sheppen	3rd Friday	Underwriters Office
Philadelphia	M. G. Sellers	1518 Sansom St.	2nd Thursday	1716 Arch St.
Pittsburgh	Fred Rebele	209 4th Avenue	1st Thursday	4th Avenue
Scranton	A. J. Fowler	Board of Trade Bldg.	Tuesdays	Zenke's
St. Marys	C. E. Blakeslee	Dubois	Mondays	
Wilkes-Barre	Ambrose Saricks	Penn. Pr. & Lt. Co.	Tuesday Evenings	Penn. Pr. and Lt. Co.
York	A. E. Harris	E. King Street	2d & 4th Tuesdays	
RHODE ISLAND				
Providence	Herbert C. Hill	35 Westminster Street	1st Thursdays	
SOUTH CAROLINA				
Charleston	J. P. Connolly	Cons. Ry. & Light'g Co.		
Columbia	E. L. Cashion	Sumter, S. C.		
Greenville	E. C. DeBruhl	Ideal Electric		
TENNESSEE				
Chattanooga	Carl Schneider	412 Kirby Avenue	Wednesday	Manhattan Cafe
Knoxville	H. M. Moses	615 Market Street	Noons	Railway Light Co.
Memphis	J. J. Brennan	Memphis Pow'r & Lt. Co.	Monthly	
Nashville	J. Shannon	8 Ave. and Church	1st Thursdays	Tribune Hotel
TEXAS				
Dallas	Miss B. E. Burkhardt	Deer Building	On Call	Deer Building
El Paso	R. S. Murray	1515 No. Campbell	Ev. Tuesday	303 Martin Building
UTAH				
Salt Lake City	E. H. Eardley	Box 544	Tuesdays	Chamber of Commerce
VIRGINIA				
Lynchburg	Irby Hudson	Hudson-Morgan Elec. Co.	1st Thursdays	Piedmont Club
Norfolk	K. D. Briggs	Arcade Building	Wednesdays	Chamber of Commerce
Richmond	W. A. Cutlett	Jefferson and Grace Sts.		
WASHINGTON				
Seattle	Rush McCarger	3rd and Madison St.	Thursdays	Elk's Club
WISCONSIN				
Green Bay	John B. Tingley	223 Cherry St.	1st Thursday	Nicolet Building
Madison	Otto Harloff	602 State St.	Wednesdays	Asso. of Com.
Milwaukee	Walter F. Baumann	156 5th Street	1st Monday each Month	456 Broadway
Racine	F. H. Patrick	1545 W. Boulevard	1st Tuesday	Racine Building
CANADA				
Calgary	E. W. Beard	The Gringer Co.	Bi-weekly	Christie Elec. Co.
Guelph	W. E. Lemon	clo N. Electric Co.	2d and 4th Monday	
Hamilton	K. J. Donoghue	clo Doerr El. Co.		
Kitchener	O. S. Leyes	65 McGill College Ave.		
Montreal	G. C. L. Brassart	128 Osgoode St.	Monday 8:00 p. m.	Elec. Inspection Office
Ottawa	A. C. McDonald	Electric Shop	1st and 3rd Wednesday	Chamber Commerce
St. Catherine	A. J. Desand	24 Adelaide St.	2nd Tuesday	Board of Trade
Toronto	J. A. McKay	2427 Granville St.	Every Tuesday	314 Pacific Building
Vancouver	J. P. Hutchinson	609 Moy Ave.		
Windsor	A. H. Cook	General Elec. Co.	2d and 4th Thursdays	Notre Dame Building
Winnipeg	R. N. Elgar	609 Moy Ave., W.		
Niagara Peninsular	W. H. Mackenzie			

Economical Electric Home Display of Wisconsin Association

A number of new ideas in electrical home exhibits were put into practice by the Wisconsin Electrical Development Association at the Milwaukee Home Building Exposition in March, according to the report of F. A. Coffin, secretary. There were over 50,000 paid admissions at the exposition and the report states that the Association feels well repaid for its efforts by the enthusiasm aroused by the exhibit.

Two years ago when the Association opened an electrically-equipped home in a Milwaukee suburb, 15,000 inspecting it in three weeks, it was thought that the best possible avenue of pub-

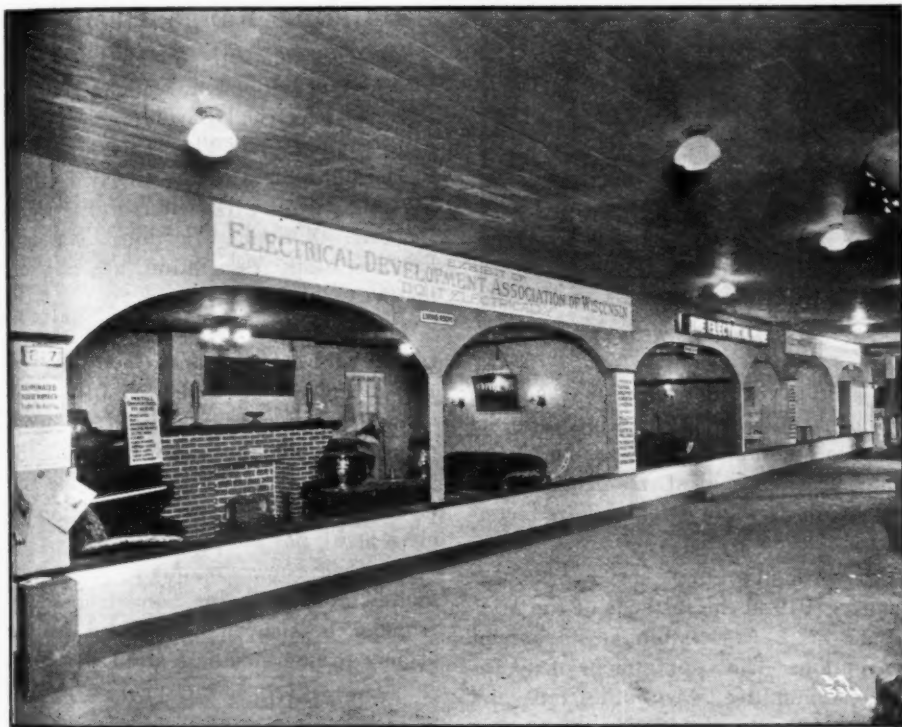
inches high, prevented actual access to the room, thus eliminating wear and tear on equipment, which is one of the few real objections to the "open house" plan. Various electrical firms participated in supplying the wiring and electrical equipment.

It was determined to try the experiment of having no attendants in charge on the theory that the display was so completely self-explanatory and the power of suggestion so dominant that the individual visitor would sell himself on the idea. That the judgment of the committee was well-founded was proven by the interest of pub-

places, drew the attention of the public forcibly to the location of and desirability of having a large number of such outlets in the modern home.

A display of this character, it is anticipated, will be a regular feature of future Milwaukee Home Shows. The cost of subsequent exhibits will be greatly lessened because the rooms are now part of the fixtures of the auditorium and construction and wiring costs will hereafter be eliminated.

Itemized costs of the display, the extent to which the various groups in the association contributed and the dimensions and detailed equipment of the rooms are omitted for the want of space, but associations in other cities contemplating putting on similar displays may have questions answered fully by writing the Electrical Development Association of Wisconsin, Public Service Building, Milwaukee.



To See an Electric Home is to Appreciate It. This Most Effective Exhibit Remained Untouched by the Public and is Fresh and Clean for Use Next Year

licity had been found for the "Do It Electrically" idea. However, the association contracted for a space approximately 110 feet long and 12 feet deep at this year's home exposition and the members have come to the conclusion that the display there was considerably more effective and economical.

The space was divided into various rooms—general headquarters, and a model living room, dining room, bathroom, bedroom and laundry. These rooms were finished and furnished in every detail. Only the front of the rooms were open and a railing, thirty

tically every visitor who viewed the display.

An opportunity was given visitors to secure literature on the various features by depositing their names and addresses on cards in a receptacle, these leads being particularly valuable because they were not secured by persuasion or sales talk.

The "convenience outlet" message dominated in every room. Each contained a printed card indicating the various electrical appliances that might appropriately be attached to the outlets. Large curved arrow cutouts, many of them pointing to hidden

"Every Contractor a Dealer" Is Chicago Ideal

The Chicago Association of Electrical Contractors and Dealers has recently embarked upon a campaign to make every contractor in the midwest metropolis a dealer also, and J. W. Collins, secretary, reports that the sun of success seems already to be smiling on the proposal. The association has received the complete co-operation of the Commonwealth Edison Company.

The usual reply of the contractor to the plea that he become a dealer as well is that the central station company has the advantage of the dealer in selling appliances in having direct contact with the lighting and power customer. However, this objection has been done away with in Chicago, the central station company having agreed that it will appoint any responsible retail establishment as a customer pay station. In addition dealers have been given the right to sell appliances on light bills, the company collecting without charge and financing the dealer through the association. The dealers also issue and redeem discount coupons.

The central station has given the association the services of several men to develop the business, trim dealer windows and act in an advisory capacity, and the association members have been made exclusive agents for the products of the subsidiary manufacturers of the light company and benefit by all its advertising.

Monopolistic Compensation Insurance

The answer to a report by Mr. Fitzgerald, favoring a bill in the House of Representatives to provide compensation insurance for workmen in the District of Columbia through a monopolistic "district insurance fund" has been made by the Workmen's Compensation Publicity Bureau and is available in pamphlet form.

It is a brief but very concise refutation of almost all the arguments in favor of a state monopolistic form of compensation insurance. It backs up every argument with actual proof and concrete data.

Those interested in following this bill will find in the pamphlet a fund of information and data.

Pennsylvanians to Meet

The twelfth annual meeting of the Pennsylvania State Association of Electrical Contractors and Dealers will take place at Allentown, Pa., June 11. The meeting was originally scheduled for June 4, but was postponed by R. W. Keck, president, as that date conflicted with the convention of the Electrical Supply Jobbers' Association.

Among the speakers will be Samuel A. Chase of the Westinghouse Electric & Manufacturing Company, who will talk on the subject of "Selling the Electrical Idea to the Public." Central station organizations have been interested in the meeting and are expected to swell the attendance by sending representatives to discuss central station cooperation with contractor-dealers.

After the business session in the afternoon Mr. Keck has announced plans to take all the delegates to visit a 3,000-acre game reservation near Allentown, containing one of the few herds of buffaloes in the east, as well as large herds of elk and deer.

Community Exhibit Success

The Central Vermont Hydro-Electric Company and the Rutland Railway, Power & Light Company, in co-operation with the contractors and dealers of the district, conducted a very successful Community Electrical Exhibit Week in Rutland during May. The attendance exceeded 20,000 and the immediate sales of electrical products totalled over \$10,000. One retailer disposed of nineteen cleaners at the exhibit.

Abbott Joins A. E. I. Staff as Technical Director

Arthur L. Abbott, widely known in the electrical industry for his cost data work, has joined the staff of the Association of Electragists—International, and will carry on the work started by the Cost Data Committee of the association. His research work will include an investigation of labor costs and the



ARTHUR L. ABBOTT

preparation of an additional section of the Manual of Estimating, and he has also announced plans for an immediate investigation of residence-wiring costs with flexible steel armored conductor.

Mr. Abbott's first cost work was done in 1919 at the instance of the Minnesota State Association at its annual convention. The appointment of a Cost Data Committee was authorized and Mr. Abbott served on it as a member at first and finally as chairman. He has contributed a number of articles on cost data to THE ELECTRAGIST, and has taken an active part in association work on this subject.

He was born in Albert Lea, Minn., and received a degree in electrical engineering at the University of Minnesota in 1897. He entered the employ of W. L. Gray & Company, Minneapolis electrical contractors, after leaving the university and rose to the position of general superintendent and estimator. During this period steel conduit was just coming into use, and estimating methods and data for the first conduit jobs had to be arrived at mainly by assumption.

In 1908 he went to St. Paul as manager of the Electric Construction Company, later the Commonwealth Electric Company. While there he became convinced that one of the greatest needs of the electrical contracting business was better estimating methods and gave the subject much study. In 1920 he became manager of sales for the Frank Adam Company of St. Louis. Mr. Abbott is a member of the A. I. E. E.

In addition to cost data work for the association, Mr. Abbott will have charge of all technical correspondence with members and also will visit as many cities as possible to obtain the co-operation of local associations and estimators' clubs in the collection of cost data and the improvement of estimating methods.

Building Range Business

The four manuals on electric range business development, which The Society for Electrical Development of 522 Fifth avenue, New York City, prepared in co-operation with the Electric Cooking and Heating Division of the Commercial National Section, National Electric Light Association, are now off the press.

Three of these manuals deal respectively with Sales Management, Advertising and Retail Sales and Management. Copies are now available to non-members of the society at \$2 each. The fourth manual deals with Servicing and is available to non-members of the society at \$1 per copy.

Another new manual, containing merchandising helps on irons and ironers, is also being offered by the society to non-members at \$1 per copy.

Youngstown Promotion Work

The Electrical League of Youngstown, Ohio, has been under way for two months, with Howard Fink as president, N. L. Norris as vice president and Rufus Moses as executive manager. The league has taken permanent quarters in the Tod House and holds monthly dinner meetings. Work is now being carried on with the architects and builders and the home owners of Youngstown with the aim of improving residence wiring installations and ground has been broken for an Electric Home to be exhibited under the auspices of the league in September. A co-operative Christmas Campaign is also contemplated, to be held during December.

Newark Electrical Show

The first electrical show ever given in Newark, N. J., will open its doors to the public on the afternoon of June 2 at the Roseville Armory with over 150 exhibitors and a display and entertainment program that will run to the night of June 7. The show is sponsored by the Master Electricians' Association of Newark.

The entire armory building has been rented and public and trade interest is aroused to such an extent that the financial success of the exhibit was assured two weeks before the date of opening. All the display spaces had been reserved by that time, making it possible for the association to keep the show an exclusively electrical one, and restrict exhibitors to electrical manufacturers, jobbers, contractors and dealers.

The building has been decorated in the form of an electric cave with a canvas background painted to represent rocks. The show has received considerable advance publicity, all electrical stores having displayed posters bearing the announcement and a figure of Benjamin Franklin with his kite. A banner above the street at the armory bears the same insignia.

Each afternoon will be devoted to a particular group of exhibitors and there will be two speakers on the subject scheduled for special attention that day. The amusement program provides for orchestras and singers every afternoon and evening and each evening there will be a showing of a moving picture dealing with some phase of the electrical industry.

Australians Ask Licenses

A bill providing for the licensing of all electrical contractors in New South Wales, Australia, will be presented at the next session of the State Parliament there, according to a communication received from S. Mellor, secretary of the Electrical Contractors' Association of New South Wales.

Though the association has been in existence for only four and one-half years, it has a membership of 150 and has been responsible for many reforms in electrical conditions there. After repeated attempts the association has convinced the Cabinet Minister in the State Parliament of the necessity of licensing contractors and he has had a bill drafted which is expected to become a law at the next session.

As soon as a licensing system has been established, according to Mr. Mellor, the association desires to interest its members in the all-important part of their business, namely estimating and cost accounting. For this purpose the Australian electragists have obtained copies of the New Business Record, Universal Estimate Sheets and Manual of Estimating compiled by the A. E. I.

Chicago Territory Leagues

Eleven district electric leagues are operating in the Chicago suburban territory served by the Public Service Company of Northern Illinois. E. J. Teberg of that company is in charge of league work and reports that Electric Homes are projected for Evanston, Elmhurst, Chicago Heights and Kankakee, Ill., and a number of other communities.

Minneapolis Forms League

A very successful get-together meeting, attended by 176 electrical men of Minneapolis recently, has brought about the formation of the Electrical Board of Trade of Minneapolis. Constitution and by-laws were adopted at the meeting and the executive committee elected. The following are the officers: President, J. S. Hogan; first vice president, George P. Svendsen; second vice president, Charles Arrick; treasurer, R. M. Laird; secretary, Leo Cooper.

The Board of Trade is established on the basis of individual membership, but with the authority to raise funds for promotional activities.

This permanent organization is the outcome of the Electric Home Campaign in 1922 and the Commercial Lighting Campaign last fall. Monthly dinner meetings will be a regular feature and an outing is planned for this summer.

Record-Breaking N. E. L. A. Convention at Atlantic City

SIX thousand leaders of the electrical industry, from every corner of the country, gathered in Atlantic City, N. J., May 19-23, for the forty-seventh and one of the most successful of all the conventions of the National Electric Light Association.

Practically every interest in the electrical field was represented and discussions at the business meetings took up a widely diversified number of problems. Among the features of the convention were an address by Senator Arthur Capper of Kansas and a telephonic address by Secretary of Commerce Herbert Hoover. Both talks were broadcasted by radio.

Outstanding among the papers presented to the Commercial Section was one by Charles J. Russell, vice-president of the Philadelphia Electric Company, on "Selling Service." Selling service is the proper function of the central station, Mr. Russell said, while merchandising power-consuming appliances is that of another group. Discussing this, J. G. Barry asserted that if the central-station companies are not successful in expanding and selling their service there will be nothing left for manufacturers and dealers to do but supply renewals. F. A. Ketcham contended that the electrical manufacturer must go farther in selling the electrical idea to the public and must

strive for a higher standard of appliance. He stated that 25 per cent. of those now sold go off the line because of breakdowns within a year after they are sold.

More satisfactory profits in appliance merchandising was the plea of John F. Gilchrist, vice president of the Commonwealth Edison Company, Chicago, at a session of the Accounting Section. Mr. Gilchrist said that the low-price distribution of appliances to place them on central-station systems in earlier years continues to retard the prosperity of appliance dealers, both inside and outside the central station. He said he had observed how difficult it is to conduct an all-electric appliance store successfully under these circumstances, although the market for appliances is still far from exploited.

The following officers were elected: President, Franklin T. Griffith, Portland Railway, Light & Power Company; first vice president, James E. Davidson, Nebraska Power Company, Omaha; second vice president, Robert F. Pack, Northern States Power Company, Minneapolis; third vice president, Howard T. Sands, Charles H. Tenney & Company, Boston; fourth vice president, P. S. Arkwright, Georgia Railway & Power Company, Atlanta; treasurer, W. A. Jones, Henry L. Doherty & Company, New York.

Supplemental Statement on Separate Contracts

The hearings on separate contracts for mechanical and electrical work for government buildings which have been under way by the United States Bureau of the Budget, through the Inter-departmental Board of Contracts and Adjustments, for the past two years have come to a close. The Association of Electricians in conjunction with the National Association of Master Plumbers and the National Association of Heating and Piping Contractors presented to the Bureau a statement supplemental to that of last year.

In this final statement the joint committee made answer to all the negative arguments received from the Budget Bureau as having been presented to it by others. The joint committee showed that no attempt had been made to question any of the facts that it had presented previously.

Most of the arguments of the opposition were without weight on the face

of them, but one which apparently was strong was quickly scotched by the joint committee. The general contractors claimed but five per cent was received on sub-contracts and that this went to pay for "superintendence, night watchman, hoisting, storage space, protection from weather, temporary heating and other general overhead expense entailed by the sub-contract which cannot be accurately proportioned to each unit of construction."

"With reference to the above" the report of the joint committee adds: "We have to say that the mechanical equipment contractor pays directly to the general contractor for most of the items mentioned."

Other arguments of the opponents were disposed of in a similar forceful manner. As the case now rests, the joint committee has before the Budget Bureau, through the Inter-departmental Board, a plan well fortified with the facts, experience and statements by renowned architects and officials.

inspectors at present than in 1915 when the city was much smaller.

It adds that the licensing of wiremen is impossible of enforcement with the present inadequate force of inspectors, and scores the licensing of men after about six weeks of study in certain schools in existence in Detroit.

The Bureau has made six suggestions for improving the situation, as follows in part:

1. All persons or firms must be licensed with some definite provision for considering their qualifications. The department shall have the power to revoke or suspend the license of anyone continuously making improper installations.

2. The wiremen's license should be eliminated on the ground of impracticality and there should be substituted a master electrician's license, one such man to be connected with each organization making installations and to be held co-responsible for the work with the contractor.

3. All establishments desiring to sell electrical materials or apparatus dangerous to life or property should be licensed and bonded, the license to be revokable if goods not approved by the department are sold.

4. A sufficient number of competent men should be hired as inspectors and paid a salary commensurate with the service expected.

5. Elimination of the personal bond.

6. Rigid enforcement of the ordinance as written and all the rules, with changes in the rules only at stated intervals.

Better Inspection Asked in Detroit

Contractors' Bureau Reports to City Commerce Chamber on Present Inadequate System—Suggests Eight Remedies

IN an effort to bring about better municipal inspection of electrical installations, a report citing present conditions and suggesting remedies for faults has been submitted to the Detroit Board of Commerce by the Electrical Contractors' Quantity Survey Bureau of that city. It is the view of the bureau, according to N. J. Biddle, manager, that stricter inspection will benefit not only persons who have work done but the electrical contractors also.

In theory, the report says, the powers of the Department of Building and Safety Engineering constitutes a proper safeguard for life and property, but in practice they fail to do this, due to the undermanning of the department and the inadequate salaries paid inspectors.

"The ordinance," continues the report, "provides that all contractors and wiremen must be licensed but actually there are many doing electrical contract work who are not licensed, while not over half the wiremen are licensed, the reason for this being the small number of inspectors.

"While the provision that all electrical work is to be inspected before being covered up is well observed, the fact remains that the actual hazard does not start until the current is turned on.

There are twelve thousand such risks in the City of Detroit, some of which date back to September, 1922. The section of the ordinance concerning re-inspection is not well observed, there having been in 1923 only 969 re-inspections out of the many thousands that should have been made. Of what use is it to inspect carefully and render safe the wiring in a modern fire-proof building, yet allow an old fire trap with the most hazardous kind of electrical work to exist next door? In addition this lack of re-inspection gives ample opportunity for the unlicensed contractor to ply his trade unmolested.

The report cites in addition that the courts have failed to adjudge the lawful penalties in many cases brought by the department, that the department does not attempt to hold the contractors responsible for their work but merely forces the bonding company to have all defective work repaired, that no qualifications other than a bond are needed to become a contractor, and that in some cases inspection is delayed for many months and the original contractor is held responsible for the work though in the meantime others may have made extensions or additions to his work. There are, it continues, fewer

Battery Standards Planned

Representatives of nine dry battery manufacturers, four electric companies, two telephone companies, a railroad and nine Government departments met at the Bureau of Standards in Washington recently for a preliminary conference on dry cell standardization.

Standard performance tests for radio filament and plate batteries were adopted at the conference, and the standardization of "B" battery sizes, at least a standardization of the unit cells, was proposed. A special sub-committee was appointed by Dr. W. G. Vinal of the Bureau of Standards to make recommendations as to the "B" battery specifications.

The committee decided not to require a "noise" test of batteries, since they were not believed responsible for suf-

ficient noises to make these tests worth while.

The committee was also instructed to recommend a standard set of designations for all types of dry cells, so as to do away with the present confusion resulting from the fact that each manufacturer uses his own specifications.

Merchandising House Wiring

How best can the contractor sell his specialty, housewiring, and why must he use broader means to educate the public than other merchants? These pertinent questions were asked and answered by L. B. Johnson in a talk on the merchandising of house wiring, given at a recent meeting of the Rocky Mountain Electrical Co-operative League at Salt Lake City.

Selling house wiring is difficult for two reasons, one of them being that the contractor has to sell his product before it is manufactured and the other that after it is manufactured it is not seen. In considering these points, Mr. Johnson brought out the necessity for using greater effort to educate the public and induce the home owner to accept what goes into the building. A means of doing this, he said, was to capitalize upon the one tangible thing the contractor has to sell, the satisfaction which results from the installation, and the convenience and comfort that the owner will derive from it.

He listed eight aids in the promotion of house wiring. They are:

- (1) Judicious newspaper advertising.
- (2) Window and co-operative demonstration with a sales force trained to tie in.
- (3) Direct mail campaigns.
- (4) Placing of signs on jobs.
- (5) Inside store displays of wiring devices mounted on boards or panels illustrating new methods and new devices, either for old or new homes.
- (6) Tying-in with electrical home demonstrations.
- (7) Training salesmen to talk intelligently regarding installations.
- (8) Constantly selling the idea of more convenience outlets.

Lee Lobenthal

Lee Lobenthal, for twenty years manager of the Economical Electrical Lamp Division, National Lamp Works of General Electric Company, died May 14 at his home in New York City. Mr. Lobenthal was sixty-four years old.

Lighting Fixture Meeting

An attempt is to be made soon to obtain better classification and lower freight rates on lighting fixtures, according to a report made by Charles H. Hofrichter, business manager of the National Association of Lighting Equipment Dealers, at the quarterly meeting of the executive board of the association, held at Cleveland in April. Mr. Hofrichter announced that a Traffic Committee had been appointed by the National Council of Lighting Fixture Manufacturers and that a petition for reduced rates would be presented to all regional freight classification committees as soon as possible.

He pointed out that should the committee be successful in the negotiations with the railroads it would mean a saving of thousands of dollars yearly to dealers.

E. R. Gillet, president, presided at the meeting and there were present also R. D. Paxson, treasurer; Ray W. Smith, secretary; C. J. Netting, H. E. Goldstein, G. F. Laube, A. L. Oppenheimer, C. H. Swartz and Mr. Hofrichter.

An outstanding topic of discussion with the board members was the interdependence of each branch of the industry and the similarity of the problems of each though they are viewed from different angles. It was the agreement of the members that gradually but surely there is developing a consciousness of the service to be rendered both to the industry and in turn by it to the public.

Applications covering thirty members who have joined the Association since January 1, 1924, were accepted by the board. Following this an operating budget for the Association, covering the year 1924, was presented and after considerable discussion a budget amounting to \$12,000 for the year was agreed upon. A program committee, consisting of H. E. Goldstein, Charles E. Scott and G. F. Laube, was appointed by President Gillet to work up the program for the Dealers' convention next year.

Charles Michalson, president of the National Council of Lighting Fixture Manufacturers, attended the meeting for the purpose of obtaining closer cooperation between the salesmen's organization and the dealers' association. Herman Plaut, president of the National Council, was also in attendance to extend the members of the dealers' association an invitation to attend the At-

lantic City meeting of the council to be held this month.

It is the plan of the board that the next meeting be held the latter part of this month at the Ambassador Hotel, Atlantic City, during the week of the National Council convention. A number of dealers have intimated that they will be in Atlantic City then.

Al DeVeau Starts Sales Agency

A. S. DeVeau has sold out his interest in Stanley and Patterson and has opened an office in the Dodge Building at 53 Park Place, New York, as a manufacturer's representative handling electrical specialties and radio apparatus. There are few manufacturers' representatives who are as well known amongst electragists as Al DeVeau. He has been engaged in the electrical business for the past thirty years. He attended the first convention of the Association in Buffalo twenty-three years



A. S. DEVEAU

ago and has not missed one since. During all that time he has been an active supporter of the Association. His first job was with the Westchester Telephone Company.

Following this he became successively employed by the Western Electric Company, of New York City; Pearce & Jones, the Echo Telephone Company, where he was foreman of manufacture, and the Magnetic Electric & Manufacturing Company, which succeeded the Echo Company. He became deeply interested in developing the automatic intertalk

industry and in this connection organized the DeVeau Telephone Manufacturing Company of Brooklyn, N. Y., of which he became president and treasurer. Upon the consolidation of this company with Stanley & Patterson, he became secretary of the last-named organization and was made director in charge of the factory sales.

Mr. DeVeau is now arranging his list and is ready to receive propositions on lines of reputation and merit. He proposes to cover Greater New York and Northern New Jersey.

Toronto Club Elects

Officers for the coming year have been selected by the Electric Club of Toronto, R. A. L. Gray, electragist, having been elected to the post of president. The other new executives are A. P. Ross, vice president; J. A. Harris, secretary, and P. A. Borden, treasurer.

Four Merchandising Factors

There are a good many angles for the electrical dealer to consider before he starts to sell heating appliances, as anyone who has tried it knows. But when the whole problem is boiled down to its essentials, according to C. W. Willard who spoke on the subject recently before the Rocky Mountain Electrical League at Salt Lake City, there remain four really important factors in connection with the merchandising of such appliances.

There is, of course, the matter of the dealer's attitude toward his merchandise to think of before anything else is even glanced at. The dealer must be thoroughly sold himself on what heating appliances can do for his customer before he attempts to sell at all. After that, Mr. Willard said, it is time for the retailer to consider:

(1) *Advertising.* Whether it can be on a large or a small scale it is absolutely necessary and should be concentrated on one certain definite article at a time.

(2) *Window Display.* Windows should be devoted to one article rather than several different kinds at one time.

(3) *Store Arrangement.* Floor plans should be carried out with the idea of producing a pleasing and quiet atmosphere, with appliances accessible. Booths showing possibly a living room, dining room and kitchen, each fully equipped, are very effective.

(4) *Demonstration.* Small heating appliances should be demonstrated to a much greater extent than has been the practice. Compare this situation with that of the automobile where practically all sales are made through demonstrations.

Largest Rhode Island Meeting

A discussion of the differences between the 1923 Electrical Code and the 1920 Code by Ralph W. Eaton, Public Service engineer of the city of Providence, featured the largest dinner meeting in the history of the Rhode Island Electrical League, held at Providence, with 130 members in attendance.

Mr. Eaton stated that the new code is not yet law in his city, but that the state vests with him power to make new rules which when approved by the city council have the effect of laws. He asked that a committee be appointed to cooperate with him in working out these rules and at the close of his talk President F. G. Thurston of the league announced the personnel of the committee suggested.

In speaking of grounding Mr. Eaton expressed the opinion that it would be better to go back to the single ground wire. He believed, however, that more attention should be given to fixtures, a large proportion of electrical failures occurring there. He thought it important that larger wires be used and that the minimum insulation should be 1-32 inch, which cannot be used with present fixtures. The ventilation of fixtures he regarded as unnecessary, though where gas-filled lamps are used, he asserted, fire resisting wires should be used.

The report of A. H. Alcott, program committee chairman, called attention to a fifty per cent increase in league membership in the previous two months, and explained the electrical education campaign, about to start, which will reach about 100,000 people direct by mail. Newspaper advertising and window cards will also be used.

Another Electric Home

Contractor-dealers of Madison, Wis., in conjunction with the Madison Gas and Electric Company, are planning to exhibit an Electric Home in June. A closer relationship between the contractor-dealers and the Central Station is expected to develop as a result of this venture in co-operation.

Texas Electragists Organize

Officers were elected and a permanent state organization formed at the first annual meeting of the Texas Association of Electragists held at the Jefferson Hotel in Dallas early in May. Electrical contractors and dealers from the leading Texas cities were present. T. L. Farmer of Dallas was elected president, Walter C. Graham of San Antonio, vice president, and Charles W. Graham of Dallas secretary-treasurer. The executive committee will consist of the elected officers and the following: Rap Prather of Beaumont, E. M. Dupree of Houston, H. E. Jacks of Fort Worth, J. O. Anchewartha of Austin and W. C. Sturdivant of Brownwood.

Arthur P. Peterson, field representative for the A. E. I., made the opening address of the meeting in which he told of the work being done in other States and urged the need of co-operation between electrical men.

Officers Elected

Following the election of officers of the organization, Mr. Farmer relieved W. M. Clower, who had acted as temporary chairman of the meeting, and committees were appointed. The most important of these was the trade policy relations committee, which is to hear grievances which arise between the Electragists and any other branch of the industry and to devise plans for more complete co-operation and harmony. W. C. Graham of San Antonio was appointed chairman of this committee, with Mr. Clower and E. M. Dupree as the other members.

It was decided to hold meetings of the state association quarterly with the next session to be held July 18 and 19 at Houston.

At the suggestion of Mr. Peterson the meeting passed a resolution confirming the stand of Texas electrical contractors and dealers on the canon of ethics and code of practice which will substitute the word "service" for "selfishness."

A resolution was passed adopting the standard wiring symbols and recommendations were made to architects regarding plans and the use of these symbols. It was also recommended that every member of the Texas association maintain a simple set of books to enable him to take off a financial statement each month.

Portland Code and Outlets

The place of convenience outlets in the wiring scheme has been fully recognized by the writers of the Portland (Ore.) Electrical Code, which now requires that they be installed in living rooms, dining rooms, parlors and kitchens of all new homes. The section of the code covering this requirement reads as follows:

"Approved receptacles for attachment plugs, connected directly to the circuit wires by not smaller than No. 14 wire shall be provided in parlors, living rooms, dining rooms and kitchens. A light outlet shall be so placed as to illuminate the front of every furnace or heating boiler. These requirements apply to all buildings which are to be wired for electric light. (It is the purpose of the above rule to prevent as far as possible unlawful and dangerous extensions of flexible cord in order to obtain outlets that are nearly always needed)."

Electragists interested in finding out how this requirement was inserted in the local code and how it is applied may obtain detailed information from L. W. Going, Department of Public Works, Portland.

Radio Serial Numbers Discussed

At a recent meeting held in the Hotel Pennsylvania, New York City, by the New York City Radio Association, the subject of serial numbers on radio receivers was thoroughly discussed. One of the members explained that the number is really the manufacturer's guarantee of the set and its removal makes it impossible to trace inefficient workmanship should the set, for any reason, be returned to the factory; also, the scratched-out number puts the set in a class with damaged and illegitimate merchandise.

Alexander Eisemann, of the Freed-Eisemann Radio Corporation, was asked to address the meeting on the subject and said in part:

"So long as the serial number remains on the panel of a receiver the manufacturer's guarantee is binding. I do not wish to infer that where serial numbers have been erased the goods have been stolen, but the first thing an unscrupulous person would do is remove all evidence whereby the sets could be traced. A merchant has a perfect right to purchase any article he wants and sell it at whatever price

he sees fit, but he has no moral right to advertise a well-known article at a sensational price as bait unless he has goods to deliver."

A number of cases were cited, by prominent dealers, of articles advertised at sensationally low prices and upon investigation it was discovered that when the customer went to purchase the advertised goods, only one (and sometimes no) unit was in stock. The dealer tried to sell "something just as good." This, dealers said, was reacting against even the honest dealer in the way of arousing public distrust of radio advertising.

It was pointed out at the meeting that many of the high class newspapers are refusing to accept cut-rate advertising.

Massilon Asks Inspection

Efforts are being made by the local association of electrical contractor-dealers in Massilon, Ohio, according to F. D. Mossop, secretary, to induce the municipal government there to employ an electrical inspector. The city has a population of 25,000 and the association has reported that the matter of inspection is becoming increasingly more important.

During the week of May 12, which was celebrated there as Clean Up Week, the State Fire Marshal, on his tour of inspection, was asked by the Association to place the matter officially before the city council and use his best efforts to show how much an electrical inspector is needed.

Radio Experimental Station Planned

A large experimental radio station will shortly be built by the General Electric Company for a more complete investigation of radio phenomena and broadcasting. Advance estimates place the cost of the station at \$150,000. It will be located at Schenectady, N. Y. A particular investigation will be made of the advantages of various wave lengths in solving the many problems with which radio now has to deal.

The General Electric broadcasting station, known as WGY, was originally built several years ago for experimental purposes, but it has been found that the requirements of the present-day programs permit of insufficient time for intensive experimental work.

Co-operative Buyers Lose Legal Point

The fight of retailers' co-operative buying associations to force manufacturers to allow them the same discount on their purchases that are allowed to chain stores was given a serious setback by a decision of the United States Circuit Court handed down in May. The opinion sets aside an order of the Federal Trade Commission which directed the National Biscuit Company and the Loose-Wiles Biscuit Company to permit independent grocers who had formed into groups to buy their products the same discount as those given chain stores.

The court stated that there was nothing in the proceedings to indicate that the public was in any way prejudiced by the discounts and that there was no claim that the owners of the chain stores were not competing one with the other and with other retail grocers. The opinion asserted that it was evident the public purchased its bakery products in an open, competitive market as respects both manufacturing and retailing.

How to Use Your Association

A few weeks ago the members of a local association of electragists refused to continue their membership unless visited by a fieldman. A member in a nearby city, who knew the value of the national association, hearing of this situation, wrote to the seceding members a letter from which the following is taken, telling how to get your money's worth out of your membership:

"I cannot help but feel that you fellows have something else on your chest besides the bare fact that you have not had a visit from an accredited representative from the outside. I wonder if a good deal of the apparent dissatisfaction is not of your own brewing. Do you make use of the data and information sent you by the head office? Conventions and visits by fieldmen are stimulating but, unless we help ourselves and take and make use of information given to us, no amount of preaching by outsiders will do any good. We have our troubles here, I can assure you, but there is one thing we are sold on and that is the National Association. Recently I was one of five who bid on a job amounting to over \$56,000, and there was a difference of less than \$1,500 between the highest

and lowest bid, a thing unheard of here before our education by the Association.

"We have been organized here for a number of years, and our relations with the jobber, manufacturer, and central stations are very satisfactory. This was brought about by the National, and I should be glad to give you a short resume of how we function, if you wish.

"If we, the contractor-dealers, expect to get anywhere in the electrical industry, it can only be brought about through combined efforts of all the men with enough vision and common sense to bring sufficient pressure to bear on the right source. This, in my opinion, can only be brought about by the National."

Home Electric Success

The "Home Electric," built by the Electrical League of Worcester County, Conn., has been accorded an enthusiastic reception by the public, over 18,000 persons having visited it during the first three weeks of April. The largest daily attendance up to April 22 was 2,451. While no figures have as yet been compiled on the increase in sales experienced by local electrical dealers, as a result of this public interest in the home, it is known to have created an unusual spring demand for electrical appliances of all sorts.

The Worcester League first decided to erect the home in February, 1923, and it was thrown open to the public on April 1, 1924, after fourteen months of careful planning and work on the part of the committee in charge. The house was built especially for "Home Electric" purposes, being equipped completely from cellar to attic with electrical appliances and furniture.

On April 22, the Worcester League played host at the home to a delegation of members of the Rhode Island Electrical League.

American Scientist Honored

Professor Elihu Thomson, one of the founders of the General Electric Company, is making a tour of Europe, during which he will be presented with the Lord Kelvin gold medal for excellence in research work in engineering. The award, made through joint action of British and American engineering societies, occurs every three years and Professor Thomson is the first American to receive the honor.

Inspectors Discuss Circuit Limitations and Other Problems

Ten questions of national importance to contractors and dealers were discussed May 14 and 15 by 250 delegates to the spring meeting of the Western New England Association of Electrical Inspectors, held at Pittsfield, Mass.

Keen interest centered around the discussion "Should the circuit limitation be determined by the number of rooms; the square foot area; cubic feet, or wattage?" An informal vote showed that the old "6-sixty" ruling of the 1920 National Electrical Code was inferior to the present one, adopted in 1923.

Because of the impossibility of anticipating the amount of load which will be demanded of a given outlet, it was the sense of the meeting that none of the four factors, mentioned above, could be correctly called determinant. Rather they believed that the individual judgment of the contractor must be relied upon in each case, to limit the number of outlets on a given circuit; and that further, the public education on the dangers and hazards of over-fusing must continue with greater vigor.

Overfusing a Problem

Great difficulty has been experienced by many contractor-dealers in the matter of over-fusing and it was resolved that the attention of the Associated Manufacturers of Electrical Supplies be directed to the need of a fuse-block which will not permit the use of a fuse greater than 15-amperes capacity. The ruling of the Code in its present form, on circuit limitation, was approved.

Another discussion of considerable interest was aroused by the question: "Should the grounding of portable motors be required?" One recommendation was made that the frame of all portable motors, used in wet places, be grounded. It was pointed out in this connection by the Chairman that the adoption of a three wire conductor would certainly follow such a ruling, and that while this might be ultimately advisable, it necessitates, the education of the consumer on two points: Grounded circuits and identified terminals before any appreciable value would be obtained from such a proposal.

The ten questions which were considered at this meeting were:

1. Should the words "convenience outlet" be changed to "appliance outlet?"
2. Should the provision be made for use of metal raceway in garages?
3. Should the key of a socket be connected to the center contact?
4. Should the grounding of portable motors be required?
5. Should the provision be made for a demand factor?
6. Should the lead-in of a transmitting set be 5 inches from a building?
7. Should the requirement for protection from surges, etc., be changed?
8. How the circuit limitation should be determined.
9. Should the interval between issues of the National Electrical Code be lengthened?
10. Does there appear to be a need for a Code rule permitting a system ground wire for a 4,000 volt, 4-wire, 3-phase system and, if so, should the grounding connection of the secondary systems be attached to it?

It was the consensus of opinion that the local codes are gradually being shaped in accord with the National Electrical Code, and that difficulties now arising from the enforcement of municipal local codes, in rejecting apparatus, now approved, or on wiring practice, are rapidly diminishing.

No Interval Change

The present interval between issues of the Code was approved as giving ample time for field observation, committee study, and group recommendations for any changes which practice suggests should be made.

The meeting on Thursday morning took cognizance of the uncertainty of use in the term "convenience outlet" and resolved: "That the name in common use for convenience outlet at the time of the next meeting, be adopted by the Code.

The Association announced themselves to be in favor of surface race-

ways other than conduit, where certain specifications (inscribed in the minutes) were followed.

Because of illness, President Thomas H. Day, of Hartford, was unable to attend the meeting.

C. A. Bates, Chief Engineer of the Bryant Electric Company, was elected Chairman pro-tem of the two-day meeting.

Starting with luncheon at noon the delegates were guests of the General Electric Company at their Pittsfield plant. They were briefly addressed by C. C. Chesney, manager of the Pittsfield works, who outlined the growth of the transformer industry since its conception. Later the delegates inspected the transformer section of the plant.

Colonel Henry M. Byllesby

The preceding month saw the passing of one of the pioneers of the electrical industry, Colonel Henry M. Byllesby, head of H. M. Byllesby & Company, public utility organizers. Born in 1859 at Pittsburgh, Colonel Byllesby started work in a machine shop at Allentown, Pa., when he was only twelve. Later he studied at Lehigh University and received a degree in mechanical engineering. His first direct connection with the electrical industry was in 1882 as draftsman of the First District Pearl Street station of the original Edison Electric Illuminating Company of New York. In the years between 1885 and 1902, at which time he formed the Byllesby company, he was vice president of the first Westinghouse Electric Company and one of the first business associates of the late George Westinghouse; president of the Northwest Thomson-Houston Company and its successor, the Northwest General Electric Company; and was also connected with the U. S. Electric Light and Power Company, the Riker Motor Vehicle Company and the Electric Vehicle Company. During this period he was prominently identified with the development of water power in Oregon, Montana and Minnesota. The World War found him in service as Lieutenant Colonel, U. S. A., acting as London representative of the purchasing bureau of the A. E. F., nearly a billion dollars worth of supplies being bought through his office. For this service he was decorated by the American and British governments with the Distinguished Service Medal and the Distinguished Service Cross.

Tulsa Electric Show

The electrical dealers and contractors of Tulsa, Okla., in co-operation with the Public Service Company of Oklahoma, held a one-week electrical demonstration at Tulsa during April. The lobby of the local lighting company was converted into display spaces, so arranged that all of Tulsa's electrical dealers had an equal opportunity to display their lines of electrical goods. The lighting company also participated by having demonstrations in the different departments. A. F. Keller, new business manager of the service company, arranged the details of the exhibit.

No Radio Tax

The proposed ten per cent Federal tax on radio sets and parts was stricken out of the current tax bill early in May by a 40 to 13 vote of the United States Senate. The action was a victory for the radio industry, which immediately upon learning of the intended levy had brought all its forces to bear against that section of the bill and had enlisted the aid of the public by means of broadcasted talks and newspaper publicity. Chances for any similar bill to be proposed within the next few years are thought to be negligible, Senator Wadsworth of New York having expressed the opinion of the Senate when he asserted that it would be unfair to tax an infant industry and that no tax should be levied until the business had become as standardized as other industries.

Florida Electragists

The value of local meetings was emphasized by Preston Ayers, president of the Florida Association of Electragists, at the second meeting of the association held at Orlando recently. Mr. Ayers pointed out a great improvement in business conditions and co-operation since it became customary to hold local meetings at Orlando.

After a luncheon at the Angebilt Hotel, H. R. Worthington, president of the Florida Electric Supply Company, spoke briefly on the necessity of collecting accounts, and assured the meeting that the state association would have the co-operation of the jobbers in any constructive work it might want to do along these lines.

He was followed by F. W. Knoeppel, of the Trumbull Electric Company, of

Atlanta, who laid particular stress on the fact that the electragist must give the best quality of work, since he gets praise for good work and receives no credit for work which is other than the best. Mr. Pierce of the Pierce-Brown Electric Company, of Tampa, also spoke on the necessity of collecting accounts.

At the close of the meeting L. D. Little, the retiring secretary, turned over his records to Charles E. James, of Fort Pierce, who was elected in his place.

Dr. Ernest Fox Nichols

The electrical industry sustained a severe loss in the death of Dr. Ernest Fox Nichols, of the Nela Research Laboratories, who died of heart disease April 29, while addressing an audience of scientists at the National Academy of Sciences at Washington.

Dr. Nichols was born in Leavenworth, Kan., June 1, 1869, and obtained his Bachelor of Science degree from the Kansas Agricultural College, and his Master of Science and Doctor of Science degrees from Cornell University. He also received degrees from the University of Berlin, the University of Cambridge in England, Colgate, Clark, Wesleyan, Vermont, Pittsburgh and Dennison Universities. He served at various times on the faculties of Colgate University, Columbia University and Dartmouth College, and became president of the latter in 1909. In 1916 he was appointed Professor of Physics at Yale. He has served as a research associate of the Carnegie Institution and during the World War was attached to the Navy Bureau of Ordnance, doing scientific work. For many years he was a fellow of the National Academy of Sciences and became its vice president in 1903.

Another Active League

Word has been received that the Electric League of Knoxville, down in the state of Tennessee, is a very active organization. The officers are: W. E. Briscoe, president; Jerry G. Cason, secretary-treasurer; with the following board of directors: L. P. Self, C. R. Wright, Henry M. Moses and Sam Levy. At the present time regular meetings are being held monthly, and so much interest is being displayed by members that it is the hope of the officers that regular meetings can be held oftener in the near future.

Commerce Chamber Likes A. E. I. Cost Studies

The latest cost studies completed by the A. E. I., comprising the Manual of Estimating, House Wiring Manual and "The Cost of Doing Business" pamphlet, have been very favorably commented upon by the Department of Manufacture, Chamber of Commerce of the United States. Permission has been granted the Chamber by the association to bring them to the notice of other industries.

A letter from T. W. Howard, in charge of cost accounting for the department, compliments the association on making such excellent progress in the preparation of material so valuable to an industry. The paragraph in "The Cost of Doing Business" pamphlet, which touched on the dangers regarding the use of general averages, attracted particular attention, Mr. Howard suggesting that this paragraph be placed in italics when the pamphlet is next printed, inasmuch as some business men are apt to substitute the use of averages for their own cost figures.

New Beaumont President

O. C. Brandt, head of the contracting company of that name, has been elected president of the Beaumont Association of Electrical Contractors and Dealers, recently organized. He reports that plans are on foot to swell the membership of the association.

T. Commerford Martin

T. Commerford Martin, widely known in the electrical industry as author, editor and association executive, passed away at Pittsfield, Mass., on May 18, at the age of 68. Mr. Martin came to this country from England after finishing his education and was associated with Thomas A. Edison during 1877-79 in laboratory work and electrical development. He was editor of "Electrical World" from 1883 to 1909, when he resigned to become secretary of the National Electric Light Association, which position he held about ten years. He was decorated by the French Government as Officer de L'Instruction Technique in 1907.

The best known of Mr. Martin's books is "Edison, His Life and Inventions," of which F. L. Dyer was co-author. His latest, published in 1919, is "The Story of Electricity." In 1886

Mr. Martin published "The Electric Motor and Its Applications," this being the first American dissertation on the electric motor.

Montgomery Plans Code

The Montgomery (Ala.) Electrical League is contemplating an attempt to have enacted an improved municipal ordinance on electrical work. The suggestion of the league is that one ordinance be passed, regulating the responsibility and reliability of electrical contractors, and a separate one requiring a rigid conduit service from point of attachment to the meter in all new buildings with some standard requirement as to type and location of service switch and meter.

A committee has been appointed to make studies of these matters and will appreciate receiving all available information and data on the subject.

Stinson Joins Staff

H. H. Stinson has joined the staff of THE ELECTRAGIST as Associate Editor. Mr. Stinson was for several years a member of the editorial staff of the Electrical World and more recently was a feature writer and staff reporter on the New York Evening Mail. He has been engaged in newspaper, magazine and publicity work since 1916, with the exception of two years spent in the Naval Aviation Service during the World War.

Duluth Organizes

The Duluth Electric Club has been recently organized through the efforts of Frank N. Cooley, local manager of the Western Electric Company. It is the intention of the club to hold regular monthly meetings and to foster a friendly spirit among electrical men for a period before initiating any promotional activities. Mr. Cooley has been elected president of the club.

Licensing Discussion

Another local association, that of Springfield, Mass., has joined the ranks of those that are discussing the matter of city licenses for all electrical contractors. No definite opinion on the subject had been registered by the Springfield electragists at the time of going to press, but the matter was the main topic of discussion at the last meeting of the association, according to a report from A. R. Tulloch, secretary.

Recently the association put on a special lighting and wiring campaign which came up to expectations in that there were a number of old houses rewired and some cases where lighting fixtures were changed. This was done in co-operation with the United Electric Light Company of Springfield and has been an annual affair for the past three years.

Club's First Activity is Electric Home

Grand Rapids, Mich., opened its first Electric Home during May under the auspices of the newly formed Grand Rapids Electric Club. The "Electric Home" committee, under the chairmanship of Lewis B. Erwin, included Guy W. Lewis, C. J. Litscher, G. H. Watson, W. J. Ackerman, H. A. Roseberry and A. Schwenck. Following the close of the Electric Home it is intended to hold a meeting of electrical men and consider follow-up measures and perpetuation of the Electric Club as an active organization.

Utility Pay Station Plan

A plan whereby central station customers will be attracted to the stores of their neighborhood contractor-dealers has been adopted in Denver and, according to S. W. Bishop, secretary of the Electrical Co-operative League there, is resulting well. Fourteen dealer-members of the league have accepted the plan which provides that the monthly service bills of the central station customers can be paid at their establishments. As a part of the campaign, dealers taking advantage of it have their names and addresses printed on the bills of the utility company.



Passersby Were Made to Think of Wedding and Anniversary Gifts by Simple Yet Effective Window Display of the Knight Electric Company, Portland, Oregon

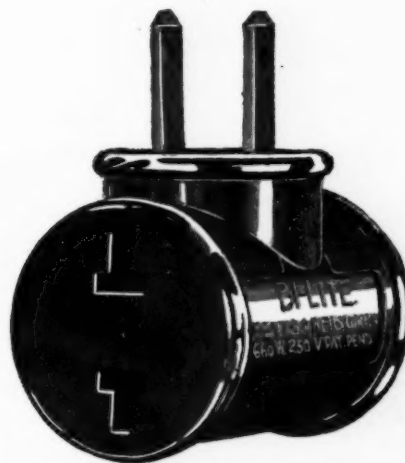
We will soon have a new BI-LITE ready for the market—a plug that will make a whale of a hit. Sign the coupon and we will send you our sensational announcement as soon as it's ready to ride.

Here it is!

We told you last month that we'd have a new BI-LITE ready soon—here she is, boys, in all her glory.

A body that's made to stand up under hard knocks; a finish without a fault; tandem blades of the better stuff; T-Slots that are clean cut and spring contacts that will never wear out.

That's the new "Ninety-One T" BI-LITE—it's going to outsell 'em all. Clip the coupon while the clipping's good and send it in—we'll do the rest.



"Ninety-one T" BI-LITE—the new handy double service plug that can never go wrong. See the coupon for our more-than-generous offer.

Bi-Lite

"Ninety-One-T"

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Louisville, Kenyon Bldg.
*New Haven, 156 Temple St.
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*San Francisco, 1062 Mission St.

*St. Louis, 1130 Chestnut St.
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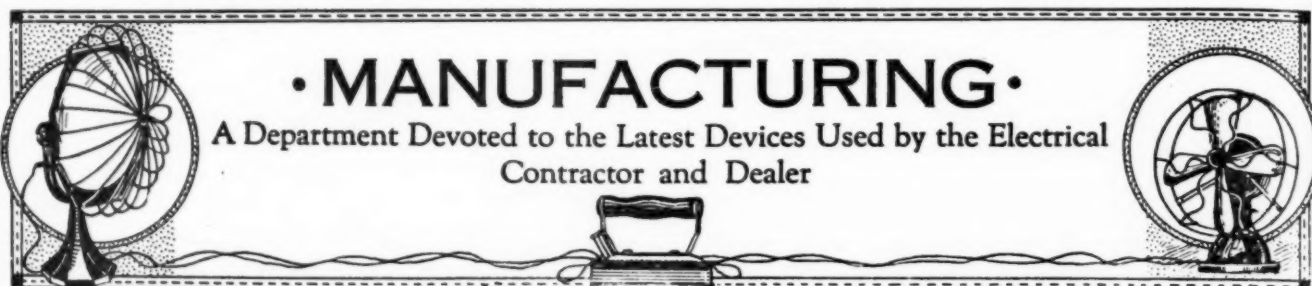
BETTS & BETTS CORPORATION,

646 W. 43rd Street, New York, N. Y.:

We accept your special introductory offer. Send us cartons of
10—91 T BI-LITES at \$3.30 per carton (this is the 100-lot price).

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• MANUFACTURING •

A Department Devoted to the Latest Devices Used by the Electrical Contractor and Dealer

Radio Voltmeter

A new radio voltmeter is being offered by the Roller-Smith Company, of 233 Broadway, New York City. The instrument is listed in Bulletin No. 10, recently issued by the company, as Type TD, direct current, radio voltmeter. In many cases outside conditions are blamed when a radio receiving set does not function correctly, when



the trouble may be due to run down or worn-out batteries. The Roller-Smith meter has been designed to show the operating voltage of both "A" and "B" batteries and also the plate voltage and the filament voltage. It can likewise be used to check up the voltage of the "C" battery when desired. The type TD meter comprises two ranges, 0-6 and 0-120 volts.

Wire Nuts



The Electric Outlet Company, of New York City, has placed on the market a device for use in making wire joints in outlet boxes and elsewhere, under the trade name of "Wire Nuts." Twisting the wires together and screwing on a "Wire Nut" takes the place of the whole soldering and taping operation. The device is approved for this purpose by the Underwriters' Laboratories. It is claimed that the use of the "Wire Nut" is conducive to faster and better

electrical work, that they make better joints at lower costs than the old method, and that the standard nature of the protection afforded will recommend them to inspectors. The materials used in the "Wire Nut" are brass and Bakelite and among the advantages claimed for the device are the different combinations of wires which can be joined with one size of "Wire Nut," the high conductivity of the brass lining, the extension of the Bakelite cap which overlaps the wire insulation and the small size of the completed joint.

Automatic Time Switch

For the control of circuits of moderate rating, the General Electric Company has put on the market a new automatic time switch, type T-7. The principal feature is the adoption of a Warren synchronous motor in place of the spring-driven clock usually employed. The new switch is for use only on A. C. circuits where the frequency is properly regulated.

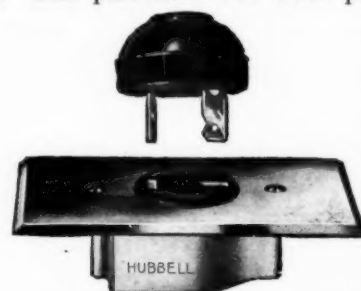
Control is effected by automatically closing and later opening the circuit at any predetermined time for which the switch may be set. It is especially adapted for use with electric signs, show windows, battery charging, etc. In size it is about 12 inches high, 5 inches wide and 4 inches deep. The case is weather-proof, adapting it for both outdoor and indoor mounting. It is rated 20 amperes, double-pole, single-throw, for use on circuits not exceeding 250 volts.

Not X-Ray Reflectors

The headline, over the article on page 60 of the May issue of THE ELECTRAGIST, describing a new line of reflector placed on the market by the Pittsburgh Reflector & Illuminating Company, of Pittsburgh, should have read "New Pittsburgh Reflectors" instead of "New X-Ray Reflectors." The former is the trade name of the Pittsburgh Reflector & Illuminating Company, while "X-Ray" is the trade name of the products of Curtis Lighting, Inc.

New Flush Receptacles

A new line of receptacles suitable for thin partitions has been placed



upon the market by Harvey Hubbell, Inc., Bridgeport, Conn. The line comprises 10 and 20 ampere polarized shallow flush receptacles which have been redesigned to fit standard convenience outlet face plates, and are only 1 3/32 inches deep.

New Lighting Hanger

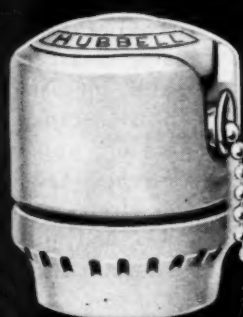
A commercial lighting hanger, embodying several new features, is the



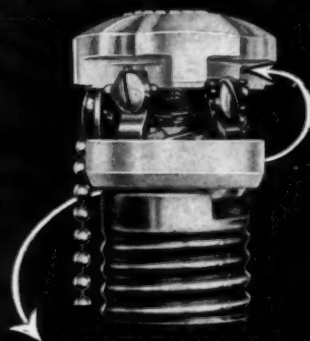
latest product offered by the F. W. Wakefield Brass Company, Vermilion, Ohio. The hickey which supports the fixture stem at the ceiling or outlet box is built to carry a pull switch, thus relieving the canopy from strain. The

HUBBELL

Pull Receptacles and Extenders



No. 998 Receptacle



EASY TO WIRE
Ample wiring space.



No. 7009 Extender



Phantom view, showing No. 998 Receptacle and No. 7009 Extender assembled to kitchen lighting fixture.

For Ceiling Lighting Fixtures

Save time in wiring ceiling lighting fixtures by using this new Hubbell Receptacle, No. 998.

Easy to wire — binding posts are accessible and porcelain is deeply recessed to provide ample wiring space.

Extender No. 7009 prevents the receptacle chain from chafing or jarring the glass fixture bowl.

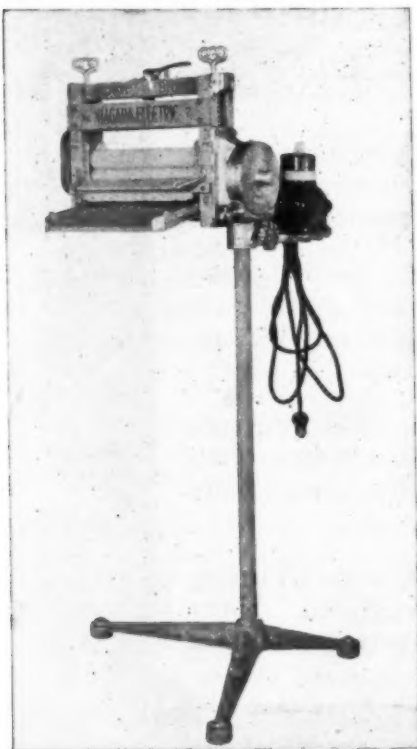
Easy to sell—because its utility is instantly recognized. Every sale means an extra profit, too.

HARVEY HUBBELL, INC.
ELECTRICAL WIRING DEVICES
BRIDGEPORT, CONN. U.S.A.

canopy itself is said to be unusually deep with knock-out and bushing for individual control and there is provided with each unit a special canopy extension to conceal outlet boxes openly affixed to the ceiling. This extension has knock-outs and twist-outs to accommodate either conduit or wiremold, to facilitate installation under any condition of wiring. Underlamping is insured against by the use of a mogul socket, correctly positioned for a 300-watt lamp, though a 500-watt size may be used if a higher intensity of illumination is desired.

Portable Wringer

A new, portable electric clothes wringer, designed for use with washing machines not provided with power wringers and as an auxiliary in laundry equipments for homes, hotels, clubs, schools and institutions, has been placed on the market recently by the Lovell Manufacturing Company of Erie, Pa. The wringer, which is mounted on a tripod, has a swivel hanging permitting it to be swung to any position over a washer or stationary tub. For per-



manent use on stationary tubs or boilers, the wringer is built without the stand and provided with clamps to hold it in place.

Power for turning the rolls is supplied by a Westinghouse heavy duty electric motor built for operation on either direct or alternating current at

110 volts on a 10-amp. fuse. The motor is reversible electrically and a snap switch in a convenient position on the top of the motor controls the operation of the wringer. A ten-foot cord and connecting plug are provided for connecting the motor to a lamp socket. The new wringer is of the full safety type.

Phonograph Attachment

The Manhattan Electrical Supply Company is offering a new phonograph attachment under the trade-mark "Red Seal." It consists of a special "Red



Seal" receiver attached to a heavy non-resonant metal base with an air chamber and diaphragm especially designed to operate the large air column of a reproducing horn. Attachment is made to the tone arm of the phonograph by means of a rubber tube. The attachment is finished in mahogany color, with a brown silk telephone cord and case of Bakelite.

Condensed Notes of Interest to the Trade

A. E. Tregenza, for eleven years sales manager of the Economy Fuse Manufacturing Company of Chicago, has gone with the Chicago Fuse and Manufacturing Company, also of Chicago, as assistant to the president. Mr. Tregenza will have charge of commercial relations.

The Crouse-Hinds Company, of Syracuse, N. Y., announces the issuance of a new bulletin, known as No. 2059, on its condulets for concealed installation, particularly for concrete construction.

The Short Electric Manufacturing Company, of Penn Yan, N. Y., manufacturers of non-metallic conduit, are now represented in the territory east of the Mississippi by Hatheway & Company, of 16 Hudson Street, New York City. The new agents will be assisted in Michigan and Ohio by Popkin Brothers, of Detroit, and in Indiana, Illinois and Wisconsin by the James A.

Gleason Company, of Chicago. Dyer & Motherwell, of St. Louis, will act as agents for the company in the eastern half of Missouri and in the Southwest.

The Saylor Electric & Manufacturing Company, formerly located at Wheeling, W. Va., has moved to its new factory building at 1014 Lynn Street, Detroit, Mich.

The American Radio and Research Corporation announces the appointment of L. P. Naylor as territorial sales manager in charge of "Amrad" sales for New York. The appointment became effective May 1. Mr. Naylor, who succeeds W. B. Barrow, Jr., has had extensive experience in the electrical construction field and has also had direct charge of sales organizations both in New York and Baltimore.

The new catalogue, covering the electrical supplies and specialties manufactured and sold by W. R. Ostrander & Company of New York, is now ready for distribution.

C. T. Uhl, formerly division sales manager for the Apex Electrical Distributing Company in the Southwest, is now district sales manager for the Pittsburgh territory of The United Electric Company of Canton, Ohio.

A simply-written, non-technical treatise on fuses and their use, which includes a complete catalogue of the fuses and other products manufactured by the Bussman Manufacturing Company, of 3819 North Twenty-third Street, St. Louis, is being distributed to those in the trade who are interested. The treatise-catalog is attractively printed and, according to the company's announcement, contains much fuse information never before printed.

The Weber Electric Company, for which Henry D. Sears of 80 Boylston Street, Boston, is general sales agent, has taken over the manufacture of the Staylit delayed-action pull socket, formerly made by the Tremont Products Company of Boston.

The Allen-Bradley Company, of Milwaukee, Wis., manufacturers of electric motor and control applications, has moved its Baltimore office, in charge of H. M. Wood, from 407 Munsey Building to 110 South Grant street.